

DRAFT SOLICITATION DE-PS26-01NT41094

The following DRAFT SOLICITATION is provided only to solicit public comment and questions prior to release of the program solicitation.

The public is encouraged to make comment on the draft solicitation or ask questions about the draft solicitation. All comments or questions must be submitted in writing to the attention of Mr. Larry Gillham and must be received by 2:00 p.m. on January 31, 2001 at the address shown below:

National Energy Technology Laboratory
Attn: Mr. Larry D. Gillham
626 Cochrans Mill Road
P.O. Box 10940
Pittsburgh, PA 15236-0940

or comments/questions may be submitted to Mr. Gillham via e-mail at **“gillham@netl.doe.gov”**.

All comments made in response to this draft solicitation will be considered prior to release of the program solicitation. The Government's response to any questions will be made available to each individual/organization which downloads a copy of the program solicitation.



Date

EXECUTIVE SUMMARY LETTER

TO: All Prospective Applicants

SUBJECT: **DRAFT** Program Solicitation for Financial Assistance Applications for
“Industries of the Future, Emerging Technology Deployment” Program
Solicitation Number DE-PS26-01NT41094

The purpose of this executive summary letter is to highlight some important elements of the Program Solicitation. This letter is not an integral part of the solicitation. The solicitation is a self-contained document. In the event of any conflict between the contents of this executive summary letter and the contents of the solicitation, the solicitation language will prevail.

It is the intent of the National Energy Technology Laboratory (NETL), on behalf of the Office of Industrial Technologies (OIT) in the U.S. Department of Energy (DOE) Office of Energy Efficiency and Renewable Energy, to solicit the submission of proposals for implementation of technologies to reduce energy consumption, enhance economic competitiveness, and reduce environmental impacts, specifically in the Industries of the Future (IOF) industrial sectors. The IOF sectors consist of the following, nine major materials and processing industries: agriculture, aluminum, chemicals, forest products, glass, metalcasting, mining, petroleum, and steel. Specifically, the objective of the solicitation is to mitigate the risk to industries of accepting and using these emerging technologies. It is NOT the intent of the NETL to solicit research and development projects.

The NETL intends to select a group of projects that have completed a full-scale demonstration at a manufacturing plant. Projects are not limited to those supported by the IOF Specific, IOF Crosscut and the OIT Financial Assistance Programs, although a Program Policy Factor is included which may be used to select proposals including OIT sponsored technologies over non-OIT sponsored technologies. Applicants are limited to

those organizations which own the implementation facility. Technology owners who do not own the implementation facility may not apply for assistance under this solicitation.

Individuals, corporations, nonprofit organizations, small and small disadvantaged businesses, educational institutions, and state or local governments or other entities who wish to have an application evaluated should respond to the requirements of this solicitation. Applicants must propose a Statement of Project Objectives which describes the proposed effort that will meet the Government's objectives. A sample Statement of Project Objectives format is presented in the attached solicitation. Specific details and objectives for the program are set forth in the solicitation objectives (see Section VIII, Appendix B).

The solicitation is structured as follows:

- Part I Sample Cooperative Agreement consisting of the following four sections:
 Section I -- Notice of Financial Assistance Award (DOE F 4600.1#)
 Section II -- Special Terms and Conditions
 Section III -- Intellectual Property Provisions
 Section IV -- List of Attachments.

- Part II Section V -- Conditions and Notices
 Section VI -- Evaluation Criteria and Program Policy Factors.

- Part III Section VII -- Appendix A -- Business and Financial Preparation
 Instructions.

- Part IV Section VIII -- Appendix B -- Technical Application Preparation
 Instructions.

- Part V Section IX -- Appendix C -- Exemplary List of OIT-Developed
 Technologies Ready for Implementation.

The Government anticipates multiple awards. DOE intends to award cooperative agreements, but reserves the right to award whatever instrument is in the Government's best interest.

The intent of this solicitation is to promote acceptance and use of emerging technologies developed for use in the IOF facilities. Therefore, an organization that does not qualify for the statutory patent waiver granted to domestic small businesses and non-profit organizations may apply for an individual advance patent waiver, in which the standard DOE waiver process will be followed. The conditions for a patent waiver are a minimum of 20% cost share, although this program solicitation requires 50% cost sharing, and agreement to accept the clause titled "Patent Rights--Waiver," which will be incorporated into the cooperative agreement. This clause sets forth the terms and conditions under which the recipient may elect to retain title to subject inventions under the cooperative agreement.

There is no prohibition against foreign entities participating as prime recipients or subcontractors. However, it should be noted that certain requirements (i.e. Section 2306 of the Energy Policy Act, 42 U.S.C. 13525) are applicable to foreign entities that are not applicable to U.S.-owned entities.

Per Sections 3001 and 3002 of the Energy Policy Act (EPA) 42 U.S.C. 13542 for financial assistance awards, applicants are advised that this solicitation contains a 50% cost share requirement on the part of the recipient, as a percent of the total award value, not as a percent of the Government's share. If during the preliminary application review it is found that the applicant does not satisfy the cost-sharing requirement as set forth in the solicitation, the application may not be comprehensively reviewed, and, thus, may not be considered for an award.

The total DOE amount available for this federal assistance solicitation is \$2,500,000 and the estimated award value for this solicitation is a minimum of \$5,000,000 (including the recipients minimum 50% cost share). Individual awards under this solicitation will not exceed \$600,000 in Government cost share. The duration of these projects is expected to range between 12-months and 18-months. Each project will also include a five (5) year data gathering period following completion of the initial 12-18 month implementation period.

Please be advised that non-Federal personnel may be used in the evaluation of applications for this particular solicitation. A nondisclosure agreement will be signed by all Federal and non-Federal evaluators and advisors prior to DOE furnishing a copy of the application(s) to the evaluators or advisors, along with instructions on the proper care regarding the handling of the application(s).

The Government does not anticipate providing any facilities or property for accomplishing this effort. Applicants are required to propose the utilization of existing facilities and make allowances for providing all necessary personnel, facilities, special test equipment, and materials to complete any proposed project(s).

Applications must be submitted in accordance with the requirements of the solicitation. Each of the required application parts should be bound separately and clearly labeled. The applications must be received by the Contract Specialist not later than 2:00 p.m. local prevailing time on **To Be Determined**, at the address below:

U.S. Department of Energy
National Energy Technology Laboratory
ATTN: Larry D. Gillham
626 Cochrans Mill Road
MS 921-107
Pittsburgh, PA 15236

Selection is expected to be made in **To Be Determined** and the cooperative agreements awarded in **To Be Determined**. Therefore, applications must authorize a period for acceptance by the Government of not less than one hundred eighty (180) calendar days from the date specified for receipt of applications. Furthermore, you are cautioned that late applications, modifications, revisions, and withdrawals will be treated in accordance with Section V, Article 5.18 of the solicitation.

Applications submitted by, or on behalf of: (1) another Federal agency; (2) a FFRDC sponsored by another Federal agency; or (3) a DOE M&O contractor will not be eligible for an award under this solicitation. Applicants are encouraged to maximize the use of private sector organizations in the performance of the proposed work. However, an application that includes performance of a portion of the work by a FFRDC or DOE M&O contractor will be evaluated and may be considered for award, provided that: 1) the proposed use of any such entity is specifically authorized in writing by the cognizant agency for the FFRDC or responsible DOE Contracting Officer for the M&O contractor, or authorized designee; 2) the proposed work is consistent with or complementary to agency or DOE missions and the missions of the facility to which the work is to be assigned; 3) the proposed work will not adversely impact execution of assigned programs of the facility; 4) the proposed work will not place the facility in direct competition with the domestic private sector; 5) the proposed work will not create a detrimental future

burden on DOE resources; and 6) the amount of work to be performed by the FFRDC or DOE M&O contractor may not be greater than the aggregate amount of work to be performed by all other participants in the project [unless a higher level of participation is determined to be in the best interests of the Government in advancing the objectives of the solicitation]. DOE will review the application to determine that it meets these criteria and reserves the right to reject any application that fails to do so. DOE will directly fund any work performed by an FFRDC or a DOE M&O contractor through a DOE field work proposal.

All requests for explanation or interpretation of any part of the solicitation shall be submitted in writing to the Contract Specialist at the aforementioned address. To allow a reply to reach all prospective applicants before the submission of their applications, your written questions must be received by the Contract Specialist no later than 2:00 p.m. on **To Be Determined**. If the Government elects to answer the questions, the questions will be answered via an amendment to the solicitation with copies of both the questions and the answers being supplied to all prospective applicants without reference to the originating sources. All amendments will be posted on the NETL's Internet URL at {<http://www.netl.doe.gov/business/solicit>}. For prospective applicant's who obtained a copy of the solicitation via NETL's Internet URL, please check this location frequently for any amendments. The Government reserves the right not to respond to questions received after **To Be Determined**, nor respond to questions submitted by telephone, Internet, or in person at any time.

It is recommended that all prospective applicants download a copy of the DOE "Lobbying Brochure" (<http://www.pr.doe.gov/lobbying.html>) which provides a summary of the statutory and regulatory restrictions regarding lobbying activities for Federal contractors and recipients.

Please note that an automated document writing system has been used to prepare this document. Each provision in the data base has been assigned a number. Not all of the provisions in the data base have been used in this document; therefore, the numbering may not be continuous. Blank areas appearing in the solicitation, indicated by "[TBD]" or "[To Be Determined]" will be completed after negotiations.

All debriefings of applications will be conducted in writing at the earliest feasible time.

Opportunity to Comment:

DOE has a Financial Assistance Internet web site where the public can obtain information related to grants and cooperative agreements. The web site, at <http://www.pr.doe.gov/fahome.html>, highlights an “Opportunity to Comment” on the current financial assistance program simplification effort. Comments should be provided via E-mail to: PL106107@pr.doe.gov. All comments will be reviewed, analyzed, and summarized for use by DOE and the various interagency work groups involved with implementation of the law.

The Opportunity to Comment includes identifying those processes in the financial assistance life cycle that need streamlining or improvement and offering suggestions for achieving improvements. It asks the recipient community 1) to describe what is most important in terms of program simplification; 2) to identify the specific financial assistance programs found to be most burdensome, and 3) to provide details about why they are burdensome. DOE will consider all responses in its simplification effort and provide summaries to the interagency working groups.

The input is valued, and is part of the larger process of achieving the goals the Department and of P.L. 106-107, namely simplification of Federal financial assistance programs for the benefit of our recipients.

All communications concerning this solicitation should cite the Program Solicitation number and be directed in writing to the attention of the Contract Specialist via mail at the letterhead address or via E-mail at gillham@netl.doe.gov.

Sincerely,

Original Signed By

Larry D. Gillham
Contract Specialist
Acquisition and Assistance Division

Enclosure

U.S. DEPARTMENT OF ENERGY
NOTICE OF FINANCIAL ASSISTANCE AWARD

(See Instructions on Reverse)

Under the authority of Public Law Federal Grant and Cooperative Agreement Act, Public Law 97-224 as amended by Public Law 97-258 (U.S.C. 6301-6308) and DOE Organization Act, Public Law 95-91 and subject to legislation, regulations and policies applicable to (cite legislative program title):

1. PROJECT TITLE Industries of the Future, Emerging Technology Deployment		2. INSTRUMENT TYPE <input type="checkbox"/> GRANT <input checked="" type="checkbox"/> COOPERATIVE AGREEMENT	
3. RECIPIENT (Name, address, zip code, area code and telephone no.) DRAFT SOLICITATION for COMMENT		4. INSTRUMENT NO. (DRAFT)	5. AMENDMENT NO. A000
8. RECIPIENT PROJECT DIRECTOR (Name and telephone no.)		10. TYPE OF AWARD <input checked="" type="checkbox"/> NEW <input type="checkbox"/> CONTINUATION <input type="checkbox"/> RENEWAL <input type="checkbox"/> REVISION <input type="checkbox"/> SUPPLEMENT	
9. RECIPIENT BUSINESS OFFICER (Name and telephone no.)		12. ADMINISTERED FOR DOE BY (Name, address, zip code, telephone no.)	
13. RECIPIENT TYPE <input type="checkbox"/> STATE GOV'T <input type="checkbox"/> INDIAN TRIBAL GOV'T <input type="checkbox"/> HOSPITAL <input type="checkbox"/> FOR PROFIT ORGANIZATION <input type="checkbox"/> INDIVIDUAL <input type="checkbox"/> LOCAL GOV'T <input type="checkbox"/> INSTITUTION OF HIGHER EDUCATION <input type="checkbox"/> OTHER NONPROFIT ORGANIZATION <input type="checkbox"/> C <input type="checkbox"/> P <input type="checkbox"/> SP <input type="checkbox"/> OTHER (Specify)			
14. ACCOUNTING AND APPROPRIATIONS DATA: a. Appropriation Symbol b. B&R Number c. FT/AFP/OC d. CFA Number		15. EMPLOYER I.D. NUMBER/SSN	
16. BUDGET AND FUNDING INFORMATION			
a. CURRENT BUDGET PERIOD INFORMATION (1) DOE Funds Obligated This Action \$ _____ (2) DOE Funds Authorized for Carry Over \$ _____ (3) DOE Funds Previously Obligated in this Budget Period \$ _____ (4) DOE Share of Total Approved Budget \$ _____ (5) Recipient Share of Total Approval Budget \$ _____ (6) Total Approved Budget \$ _____		b. CUMULATIVE DOE OBLIGATIONS (1) This Budget Period \$ _____ [Total of lines a.(1) and a.(3)] (2) Prior Budget Periods \$ _____ (3) Project Period to Date \$ _____ [Total of lines b.(1) and b.(2)]	
17. TOTAL ESTIMATED COST OF PROJECT \$ _____ (This is the current estimated cost of the project. It is not a promise to award nor an authorization to expend funds in this amount.)			
18. AWARD AGREEMENT TERMS AND CONDITIONS This award/agreement consists of this form plus the following: a. Special terms and conditions (if granted) or schedule, provisions, special concerns (if cooperative agreement). b. Applicable program regulations (specify) _____ (Date) _____. c. DOE Assistance Regulations, 10 CFR Part-600, as amended, Subparts A and <input type="checkbox"/> B (Grants) or <input checked="" type="checkbox"/> C (Cooperative Agreements). d. Application/proposal dated _____, <input type="checkbox"/> as submitted <input type="checkbox"/> with changes as negotiated.			
19. REMARKS			
20. EVIDENCE OF RECIPIENT ACCEPTANCE _____ (Signature of Authorized Recipient Official) (Date) _____ _____ (Name) _____ (Title)		21. AWARDED BY _____ (Signature) (Date) _____ _____ (Name) Contracting Officer _____ (Title)	

SECTION II -- SPECIAL TERMS AND CONDITIONS

2.1 CONSECUTIVE NUMBERING (JAN 1999)

Due to automated procedures employed in formulating this document, clauses and provisions within it may not always be continuously numbered.

2.2 PREVAILING REGULATIONS (NOV 1998)

As indicated on the face page, Block 18c, this Award is subject to the DOE Assistance Regulations of Title 10, Code of Federal Regulations, Part 600. This set of regulations may be found in most major libraries or on the World Wide Web at:

<http://www.pr.doe.gov/fahome.html>

2.3 ORDER OF PRECEDENCE (DEC 1999)

In the event of any inconsistency among the provisions of this agreement, the inconsistency shall be resolved by giving precedence as follows: (a) Applicable Public Laws; (b) the special terms and conditions or schedule of articles; (c) 10 CFR Part 600; and (d) other documents, exhibits and attachments.

2.4 SUBSTANTIAL INVOLVEMENT BETWEEN DOE AND THE RECIPIENT (JAN 1999)

There will be substantial involvement between the DOE and the Recipient during performance of this Cooperative Agreement.

The following type of activity is generally viewed as substantial involvement.

- Review and concurrence with the installation plan for the innovative technology
- Review and concurrence of the data collection plan which includes, but is not limited to, location of installation (proximity to baseline technology), data collection intervals, amount of data collected, data collection and analysis methods.
- Rights to view data collection in progress.

2.5 COST SHARING (JULY 2000)

The total estimated cost of the project for the work to be accomplished under this award is [\$TBD]. The Recipient and the Government agree to share the allowable project costs under this award as follows:

DOE:	[TBD]%	(50% or less)
Recipient:	[TBD]%	(50% or greater)
Total:	100%	

2.6 FUNDING (SEP 2000)

This award is to be incrementally funded. The DOE has currently obligated \$[TBD] and anticipates, subject to the availability of additional funds, obligating the DOE balance of \$[TBD]. The Recipient shall not be obligated to continue performance of this project beyond the amount set forth in Block 16(b)(3) of the DOE F 4600.1 and the DOE is under no commitment to provide additional funding to the Recipient beyond this amount.

2.7 ALLOWABLE PREAWARD COSTS (MAR 1999)

The Recipient is entitled to reimbursement of preaward costs in the amount not to exceed [TBD] of DOE obligations. These costs are limited to work associated with performance of [TBD], incurred during the period starting on [TBD] through the effective start date of this award (Block 7, DOE F 4600.1).

2.8 (RESERVED)

2.9 METHOD OF PAYMENT (NOV 2000)

The method of payment to the Recipient shall be accomplished by the method checked below:

- ☐ Advance in accordance with 10 CFR 600.122(b)
- ☐ Reimbursement in accordance with 10 CFR 600.122(e)
- ☐ Other in accordance with 10 CFR 600.122

The Recipient shall request advances or reimbursements using the Standard Form SF 270, Request for Advance or Reimbursement, and shall complete Blocks 1-11 and 13. Electronic versions of the SF 270 can be found on the NETL website at:

<http://www.netl.doe.gov/business/forms/forms.html>

Note 1: If the block designating payment by Advance is used, the Recipient is allowed advances not to exceed the funding required to cover expenditures for any succeeding one month time period. Such requests for monthly advances shall be prepared using the Standard Form SF 270 in an original and two (2) copies.

The original is to be submitted to:

U. S. Department of Energy
Oak Ridge Financial Services
P. O. Box 4787
Oak Ridge, TN 37831

The two copies are to be submitted to:

U. S. Department of Energy
National Energy Technology Laboratory
Commercial Payments Center
P. O. Box 10940, MS 921-107
Pittsburgh, PA 15236-0940

Note 2: If the block designating payment by Reimbursement is used, the Recipient shall submit the request for payment for costs incurred using the Standard Form SF 270 in an original and two (2) copies as indicated in Note 1 above. This request shall not be submitted more frequently than monthly.

STATUS OF PAYMENTS

The Oak Ridge Financial Service Center (ORFSC) has a system via Internet, in which Recipients can request information about payments by invoice, by award number, and/or by paid date. The system is called Vendor Inquiry Payment Electronic Reporting System (VIPERS) and is available to Recipients at the following website:

<http://finweb.oro.doe.gov/vipers.htm>. Recipients must have a federal tax identification number (TIN) and then obtain a personal identification number (PIN) to access the system.

2.10 NOTICE OF INVOICE PROCESSING BY SUPPORT CONTRACTOR (DEC 1999)

A support service contractor performs the function of processing of all invoices submitted to the National Energy Technology Laboratory, against its awards. Therefore, this contractor has access to your business confidential cost/rate information. A special provision in this contractor's award requires the confidential treatment by all contractor employees of any and all business confidential information of other contractors and financial assistance recipients to which they have access.

2.11 ACKNOWLEDGMENT OF FEDERAL FUNDING (NOV 1998)

When issuing statements, press releases, requests for proposals, bid solicitations, and other documents describing this project, the Recipient shall clearly state (1) the percentage of the total cost of the project

which will be financed with Federal money, and (2) the dollar amount of Federal funds for the project.

2.12 REAL PROPERTY - NONE (JAN 1999)

No real property may be acquired under this award.

2.13 RECIPIENT ACQUIRED PROPERTY (MAY 1999)

Reference Attachment D for a listing of property authorized for acquisition under this award. Property acquired by the Recipient under this award shall be managed in accordance with 10 CFR 600.130 to 10 CFR 600.137, and reported as prescribed in Attachment B, Federal Assistance Reporting Checklist.

2.14 FEDERALLY OWNED PROPERTY (GOVERNMENT-FURNISHED) - NONE (JAN 1999)

No Government-furnished property is provided under this award.

2.15 KEY PERSONNEL (JUN 2000)

Recipient personnel considered to be essential and key to the work being performed hereunder are specified below.

<u>NAME</u>	<u>TITLE</u>
<u>TELEPHONE</u>	
[TBD]	[TBD]

The personnel specified in this clause are considered to be essential to the project. Before diverting any key personnel to work outside the scope of this award, the Recipient shall notify the Contracting Officer reasonably in advance and shall submit justification (including proposed substitutions) in sufficient detail to permit evaluation of the impact on the project. No key personnel may be substituted without the Contracting Officer's approval. Such approval shall be obtained in advance of the substitution, except that the Contracting Officer may ratify a substitution which, because of exigent circumstances, was made before the Recipient could request and/or obtain the Contracting Officer's approval.

2.16 PAPERWORK REDUCTION (NOV 1998)

The award is subject to the requirements of the Paperwork Reduction Act of 1980 as implemented by the Office of Management and Budget rules, "Controlling Paperwork Burdens on the Public," published at 5 CFR 1320. These requirements apply if the Recipient will collect information from ten (10) or more respondents at the specific request of DOE, or if the award requires specific DOE approval of the information collection or the collection procedures.

The Recipient shall submit any proposed sponsored information collection to the person identified on the DOE F 4600.1 (Award Face Page, Block 12). The proposal shall be submitted at least 120 days prior to the

intended date of information collection. DOE will seek the requisite approval from the Office of Management and Budget (OMB) and will promptly notify the Recipient of the disposition of the request.

2.17 PUBLIC ACCESS TO INFORMATION (APR 2000)

The Freedom of Information Act, as amended, and the DOE implementing regulations (10 CFR 1004) require DOE to release certain documents and records regarding awards to any person who provides a written request. The intended use of the information will not be a criterion for release.

2.18 NATIONAL SECURITY (NOV 1998)

It is not expected that activities under the award will generate or otherwise involve classified information (i.e., Restricted Data, Formerly Restricted Data, National Security Information).

However, if in the opinion of the Recipient or DOE such involvement becomes expected prior to the closeout of the award, the Recipient or DOE shall notify the other in writing immediately. If the Recipient believes any information developed or acquired may be classifiable, the Recipient shall not provide the potentially classifiable information to anyone, including the DOE officials with whom the Recipient normally communicates, except the Director of Classification, and shall protect such information as if it were classified until notified by DOE that a determination has been made that it does not require such handling. Correspondence which includes the specific information in question shall be sent by registered mail to U. S. Department of Energy, Attn.: Executive Assistant for Defense Programs, DP-4, 4A-019/FORS, 1000 Independence Avenue, Washington, D.C. 20585. If the information is determined to be classified, the Recipient may wish to discontinue the project, in which case the Recipient and DOE shall terminate the award by mutual agreement. If the award is to be terminated, all materials deemed by DOE to be classified shall be forwarded to DOE, in a

manner specified by DOE, for proper disposition. If the Recipient and DOE wish to continue the award, even though classified information is involved, the Recipient shall be required to obtain both personnel and facility security clearances through the Office of Safeguards and Security for Headquarters awarded awards obtained through DOE field organizations. Costs associated with handling and protecting any such classified information shall be negotiated at the time the determination to proceed is made.

2.19 COMPLIANCE WITH BUY AMERICAN ACT (DEC 1999)

In accepting this award, the Recipient agrees to comply with sections 2 through 4 of the Act of March 3, 1933 (41 U.S.C. 10a-10c, popularly known as the "Buy American Act"). The Recipient should review the provisions of the Act to ensure that expenditures made under this award are in accordance with it.

2.20 NOTICE REGARDING THE PURCHASE OF AMERICAN-MADE EQUIPMENT AND PRODUCTS -- SENSE OF CONGRESS (DEC 1999)

It is the sense of the Congress, that to the greatest extent practicable, all equipment and products purchased with funds made available under this award should be American-made.

2.21 LOBBYING RESTRICTION (DEPARTMENT OF INTERIOR AND RELATED AGENCIES APPROPRIATIONS ACT, 2000) (DEC 1999)

The awardee agrees that none of the funds obligated on this award shall be made available for any activity or the publication or distribution of literature that in any way tends to promote public support or opposition to any legislative proposal on which Congressional action is not complete. This restriction is in addition to those prescribed elsewhere in statute and regulation.

A copy of the DOE “Lobbying Brochure” which provides a summary of the statutory and regulatory restrictions regarding lobbying activities for Federal contractors can be found at (<http://www.pr.doe.gov/lobbying.html>).

2.22 NOTICE REGARDING UNALLOWABLE COSTS AND LOBBYING ACTIVITIES (NOV 1998)

Recipients of financial assistance are cautioned to carefully review the allowable cost and other provisions applicable to expenditures under their particular award instruments. If financial assistance funds are spent for purposes or in amounts inconsistent with the allowable cost or any other provisions governing expenditures in an award instrument, the government may pursue a number of remedies against the Recipient, including in appropriate circumstances, recovery of such funds, termination of the

award, suspension or debarment of the Recipient from future awards, and criminal prosecution for false statements.

Particular care should be taken by the Recipient to comply with the provisions prohibiting the expenditure of funds for lobbying and related activities. Financial assistance awards may be used to describe and promote the understanding of scientific and technical aspects of specific energy technologies, but not to encourage or support political activities such as the collection and dissemination of information related to potential, planned or pending legislation.

2.23 YEAR 2000 COMPLIANCE (NOV 1998)

Year 2000 compliant means, with respect to information technology, the information technology accurately processes date/time data (including, but not limited to, calculating, comparing, and sequencing) from, into, and between the twentieth and twenty-first centuries, and the years 1999 and 2000 and leap year calculations, to the extent that other information technology, used in combination with the information technology being acquired, properly exchanges date/time data with it.

The Recipient assures, by acceptance of this award, that items delivered under this contract are year 2000 compliant.

2.24 REPORTING (NOV 1998)

Failure to comply with the reporting requirements contained in this award will be considered a material noncompliance with the terms of the award. Noncompliance may result in a withholding of future payments, suspension or termination of the current award, and withholding of future awards. A willful failure to perform, or of unsatisfactory performance of this and/or other financial assistance awards, may also result in a debarment action to preclude future awards by Federal agencies.

2.25 RESEARCH INVOLVING RECOMBINANT DNA MOLECULES (NOV 1998)

Any Recipient performing research involving recombinant DNA molecules and/or organisms and viruses containing recombinant DNA molecules agrees by acceptance of this award to comply with the National Institute of Health "Guidelines for Research Involving Recombinant DNA Molecules," (59 FR 34496, July 5, 1994 as amended by 59 FR 40170, 60 FR 20726, 61 FR 1482, 61 FR 10004, 62 FR 53335, 62 FR 56196, 62 FR 59032 and 63 FR 8052, "subject to change - call 301-496-9838 to obtain reference to a current version.")

2.26 NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) -- PRIOR APPROVALS (DEC 1999)

The National Environmental Policy Act of 1969 (NEPA) requires that all Federal agencies consider the impacts of their projects on the human environment. As part of the DOE's NEPA requirements, the Recipient shall be required to supply to the DOE certain environmental information. DOE funds may only be expended by the Recipient on [INSERT ACTIVITIES THAT CAN BE PERFORMED UNTIL THE NEPA DOCUMENT IS SIGNED, i.e., preliminary designs or drawings] activities, or in a manner inconsistent with 10 CFR 1506.1, until DOE notifies the Recipient that all NEPA requirements have been satisfied.

2.27 SAFETY & HEALTH AND ENVIRONMENTAL PROTECTION (JAN 1999)

The Recipient shall implement the DOE work in accordance with all applicable Federal, State, and local laws, including codes, ordinances, and regulations, covering safety, health, and environmental protection.

The Recipient agrees to include this clause in first-tier subcontracts and agrees to enforce the terms of this clause.

2.28 PERMITS AND LICENSES (AUG 1999)

Within sixty (60) days of award, the Recipient shall submit to the DOE Contracting Officer Representative (COR) a list of ES&H approvals that, in the Recipient's opinion, shall be required to complete the work under this award. The list shall include the topic of the approval being sought, the approving authority, and the expected submittal/approval schedule. The COR shall be notified as specific items are added or removed from the list and processed through their approval cycles.

The Recipient agrees to include this clause in first-tier subcontracts and agrees to enforce the terms of this clause.

2.29 PROPERTY ACQUIRED BY THE RECIPIENT

It is the intent of the Government that title to all equipment acquired or installed by the recipient be vested immediately upon acquisition or installation with the recipient. The Government will have no obligation to remove any equipment acquired for the performance of this agreement nor shall the Government have any obligation to restore the recipient's facility following completion of the performance period or the following five year reporting period.

SECTION III -- INTELLECTUAL PROPERTY PROVISIONS

3.1 INTELLECTUAL PROPERTY PROVISIONS (JAN 1999)

The patent and technical data clauses included in this section apply to this award. As used in these applicable clauses, the term "Patent Counsel" refers to the following point of contact:

Intellectual Property Law Division
U.S. Department of Energy
Chicago Operations Office
9800 South Cass Avenue
Argonne, IL 60439

In any of the FAR and DEAR clauses contained in this section, use of the term "Contract" means "Award" and "Contractor" means "Recipient."

The Recipient shall include intellectual property clauses in any contract awarded in accordance with requirements of the clauses in this section and of 10 CFR Part 600.27.

3.2 PUBLICATION OF RESULTS/ACKNOWLEDGMENT STATEMENT (JAN 1999)

Publication of the results of the award is encouraged subject to any applicable restrictions in 10 CFR 600.27 (Patent and Data Provisions). Publications, as well as reports prepared under this award shall contain the following acknowledgment statement:

"This (describe material) was prepared with the support of the U.S. Department of Energy, under Award No. DE-FC26-01NT[TBD]. However, any opinions, findings, conclusions, or

recommendations expressed herein are those of the author(s) and do not necessarily reflect the views of the DOE".

3.3 RECIPIENT PRESS RELEASES (APR 1998)

The DOE policy and procedure on planned press releases requires that all Recipient press releases be reviewed and approved by DOE prior to issuance. Therefore, the Recipient shall, at least ten (10) days prior to the planned issue date, submit a draft copy to the Contracting Officer of any planned press releases related to work performed under this award. The Contracting Officer will then obtain necessary reviews and clearances and provide the Recipient with the results of such reviews prior to the planned issue date.

3.4 CONFIDENTIAL BUSINESS INFORMATION (DEC 1999)

Data represented to the Department as being confidential business information, and which does not include “Technical Data” as that term is defined in 52.227-14 Rights in Data General clause of this agreement, shall be submitted as an attachment to the required reports and will be withheld from disclosure outside NETL to the extent permitted by law, provided such attachment and each page therein is stamped with the following legend and no other:

CONFIDENTIAL BUSINESS INFORMATION

The Recipient considers the data
furnished herein to contain confidential
business information which is to be
withheld from disclosure outside NETL
to the extent permitted by law.

3.5 CLAUSES INCORPORATED BY REFERENCE (AUG 1999)

This solicitation incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request,

the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this/these address(es):

Federal Acquisition Regulations (FAR) (Clauses starting with 52):
<http://www.arnet.gov/far/index.html>

Department of Energy Acquisition Regulations (DEAR) (Clauses starting with 952): **<http://www.pr.doe.gov/dear.html>**

- | | |
|----------------------------------|---|
| <u>3.6 52.227-1</u> | <u>AUTHORIZATION AND CONSENT.</u>
<u>(JUL 1995) -- ALTERNATE I APR 1984</u> |
| <u>3.7 52.227-2</u> | <u>NOTICE AND ASSISTANCE REGARDING</u>
<u>PATENT AND COPYRIGHT</u>
<u>INFRINGEMENT. AUG 1996</u> |
| <u>3.8 952.227-11</u> | <u>PATENT RIGHTS-RETENTION BY THE</u>
<u>CONTRACTOR (SHORT FORM). FEB 1995</u> |
| <u>3.9 952.227-13</u> | <u>PATENT RIGHTS-ACQUISITION BY THE</u>
<u>GOVERNMENT. SEP 1997</u> |
| <u>3.10 FAR 52.227-14</u> | <u>RIGHTS IN DATA -GENERAL. (JUN 1987)</u>
<u>WITH ALTERNATE V (JUN 1987) AS</u>
<u>AMENDED BY DEAR 927.409 JAN 1999</u> |
| <u>3.11 52.227-16</u> | <u>ADDITIONAL DATA REQUIREMENTS. JUN</u>
<u>1987</u> |
| <u>3.12 52.227-23</u> | <u>RIGHTS TO PROPOSAL DATA (TECHNICAL).</u>
<u>JUN 1987</u> |

Except for data contained on pages [], it is agreed that as a condition of award of this contract, and notwithstanding the

conditions of any notice appearing thereon, the Government shall have unlimited rights (as defined in the "Rights in Data - General" clause contained in this contract) in and to the technical data contained in the proposal dated [], upon which this contract is based.

SECTION IV -- LIST OF ATTACHMENTS

4.1 LIST OF ATTACHMENTS (JAN 1999)

Attachment A -- Statement of Project Objectives

Attachment B -- Federal Assistance Reporting Checklist

Attachment C -- Budget Page(s)

Attachment D -- Recipient Acquired Property

4.2 ATTACHMENT A -- STATEMENT OF PROJECT OBJECTIVES - UNDEFINED (AUG 1999)

The Statement of Project Objectives will be inserted on this page upon award.

The applicant must prepare the Statement of Project Objectives and include it as an Appendix to Volume II - Technical Application. Instructions for preparation of this document can be found in Section VIII.

NETL F 540.3-1#
(9/2000) OPI=PS10
(Previous Editions Obsolete)

Attachment B

FEDERAL ASSISTANCE REPORTING CHECKLIST

1. Awardee:	2. Identification Number:																																																																																																																
3. Report Submission Address: <i>The required and additional deliverables shall be submitted to the following address:</i> NETL ADDITIONAL DOCUMENT CONTROL U.S. DEPARTMENT OF ENERGY NATIONAL ENERGY TECHNOLOGY LABORATORY P.O. BOX 10940, MS 921-107 PITTSBURGH, PA 15236-0940																																																																																																																	
4. Planning and Reporting Requirements: <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="width: 50%;"></th> <th style="width: 15%;">Form No.</th> <th style="width: 15%;">Freq.</th> <th style="width: 20%;">Number of Copies</th> </tr> </thead> <tbody> <tr> <td colspan="4">A. PROGRAM/PROJECT MANAGEMENT</td> </tr> <tr> <td><input checked="" type="checkbox"/> Federal Assistance Milestone Plan</td> <td>DOE F 4600.3</td> <td>O,C</td> <td>3</td> </tr> <tr> <td><input checked="" type="checkbox"/> Milestone Log</td> <td>DOE F 4600.3A</td> <td>O,C</td> <td>3</td> </tr> <tr> <td><input checked="" type="checkbox"/> Federal Assistance Management Summary Report</td> <td>DOE F 4600.5</td> <td>O,C</td> <td>3</td> </tr> <tr> <td><input checked="" type="checkbox"/> Federal Assistance Program/Project Status Report</td> <td>DOE F 4600.6</td> <td>O,C</td> <td>3</td> </tr> <tr> <td><input checked="" type="checkbox"/> Financial Status Report</td> <td>SF-269 or SF-269A</td> <td>Q</td> <td>4</td> </tr> <tr> <td><input type="checkbox"/> Federal Cash Transaction Report</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="4">B. TECHNICAL (One paper copy and one PDF electronic file copy)</td> </tr> <tr> <td><input checked="" type="checkbox"/> Technical Progress Report</td> <td>None</td> <td>YF</td> <td>2</td> </tr> <tr> <td><input checked="" type="checkbox"/> Topical Report</td> <td>None</td> <td>A</td> <td>2</td> </tr> <tr> <td><input checked="" type="checkbox"/> Final Report</td> <td>None</td> <td>FG</td> <td>2</td> </tr> <tr> <td colspan="4">C. ENVIRONMENTAL</td> </tr> <tr> <td><input checked="" type="checkbox"/> Hazardous Substance Plan</td> <td>None</td> <td>O</td> <td>3</td> </tr> <tr> <td><input checked="" type="checkbox"/> Hazardous Waste Report</td> <td>None</td> <td>FC</td> <td>3</td> </tr> <tr> <td><input type="checkbox"/> Environmental Compliance Plan</td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/> Environmental Monitoring Plan</td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/> Environmental Status Report</td> <td></td> <td></td> <td></td> </tr> <tr> <td colspan="4">D. PROPERTY</td> </tr> <tr> <td><input checked="" type="checkbox"/> Annual Report of Property in the Custody of Contractors</td> <td>F 580.1-8</td> <td>A</td> <td>1</td> </tr> <tr> <td><input type="checkbox"/> High Risk Property Report</td> <td>F 4440.5</td> <td></td> <td></td> </tr> <tr> <td><input checked="" type="checkbox"/> Report of Termination or Completion Inventory</td> <td>SF-1428 or SF-120</td> <td>FC</td> <td>1</td> </tr> <tr> <td colspan="4">E. EXCEPTION</td> </tr> <tr> <td><input type="checkbox"/> Conference Record</td> <td></td> <td></td> <td></td> </tr> <tr> <td><input checked="" type="checkbox"/> Hot Line Report</td> <td>None</td> <td>A</td> <td>2</td> </tr> <tr> <td><input checked="" type="checkbox"/> Journal Articles/Conference Papers and Proceedings</td> <td>None</td> <td>A</td> <td>2</td> </tr> <tr> <td><input type="checkbox"/> Software</td> <td></td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/> Other _____</td> <td></td> <td></td> <td></td> </tr> </tbody> </table>			Form No.	Freq.	Number of Copies	A. PROGRAM/PROJECT MANAGEMENT				<input checked="" type="checkbox"/> Federal Assistance Milestone Plan	DOE F 4600.3	O,C	3	<input checked="" type="checkbox"/> Milestone Log	DOE F 4600.3A	O,C	3	<input checked="" type="checkbox"/> Federal Assistance Management Summary Report	DOE F 4600.5	O,C	3	<input checked="" type="checkbox"/> Federal Assistance Program/Project Status Report	DOE F 4600.6	O,C	3	<input checked="" type="checkbox"/> Financial Status Report	SF-269 or SF-269A	Q	4	<input type="checkbox"/> Federal Cash Transaction Report				B. TECHNICAL (One paper copy and one PDF electronic file copy)				<input checked="" type="checkbox"/> Technical Progress Report	None	YF	2	<input checked="" type="checkbox"/> Topical Report	None	A	2	<input checked="" type="checkbox"/> Final Report	None	FG	2	C. ENVIRONMENTAL				<input checked="" type="checkbox"/> Hazardous Substance Plan	None	O	3	<input checked="" type="checkbox"/> Hazardous Waste Report	None	FC	3	<input type="checkbox"/> Environmental Compliance Plan				<input type="checkbox"/> Environmental Monitoring Plan				<input type="checkbox"/> Environmental Status Report				D. PROPERTY				<input checked="" type="checkbox"/> Annual Report of Property in the Custody of Contractors	F 580.1-8	A	1	<input type="checkbox"/> High Risk Property Report	F 4440.5			<input checked="" type="checkbox"/> Report of Termination or Completion Inventory	SF-1428 or SF-120	FC	1	E. EXCEPTION				<input type="checkbox"/> Conference Record				<input checked="" type="checkbox"/> Hot Line Report	None	A	2	<input checked="" type="checkbox"/> Journal Articles/Conference Papers and Proceedings	None	A	2	<input type="checkbox"/> Software				<input type="checkbox"/> Other _____			
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6. SPECIAL INSTRUCTIONS: The forms identified in the checklist are available at http://www.netl.doe.gov/business/forms/forms.html . Alternate formats are acceptable provided the contents remain consistent with the form. All <u>technical reports</u> submitted to the DOE <u>must</u> be accompanied by a completed and signed <u>NETL F 510.1-5</u> addressing patent information.																																																																																																																	

4.4 GENERAL INSTRUCTIONS FOR THE PREPARATION AND SUBMISSION OF REPORTS (MAY 1999)

The Recipient shall prepare and submit (postage prepaid) the plans and reports indicated on the "Federal Assistance Reporting Checklist" to the addressee identified on the checklist. The level of detail the Recipient provides in the plans and reports shall be commensurate with the scope and complexity of the effort and shall be as delineated in the guidelines and instructions contained herein. The prime Recipient shall be responsible for acquiring data from any contractors or subrecipients to ensure that data submitted are compatible with the data elements which prime Recipients are required to submit to DOE.

4.5 FEDERAL ASSISTANCE MILESTONE PLAN (DOE F 4600.3) AND MILESTONE LOG (DOE F 4600.3A) (MAY 1999)

4.6 FEDERAL ASSISTANCE MANAGEMENT SUMMARY REPORT (DOE F 4600.5) (MAY 1999)

4.7 FEDERAL ASSISTANCE PROGRAM/PROJECT STATUS REPORT (DOE F 4600.6) (MAY 1999)

4.8 FINANCIAL STATUS REPORT (STANDARD FORM 269 OR 269A) (MAY 1999)

This report is used for the Recipient to provide regular periodic accounting of project funds expended. The accounting may be on either a cash or accrual basis. Actual total expenditures and obligations incurred, but not paid, are reported for each reporting period for each major activity. They should correlate with those identified on the "Federal Assistance Milestone Plan" when the "Federal Assistance Milestone Plan" is required. Provision is made to identify the Federal and non-Federal share of project outlays for each identified activity.

4.9 TECHNICAL REPORTS (SEP 2000)

CAUTION: Technical reports SHALL NOT include Limited Rights Data (such as restricted, proprietary or business sensitive information). Limited Rights Data shall be submitted in a separate appendix to the technical report. This appendix SHALL NOT be submitted in an electronic format but rather submitted in ONE ORIGINAL AND THREE (3) PAPER COPIES along with the paper version of the sanitized technical report deliverable. The appendix shall be referenced in, but not incorporated into, the sanitized technical report deliverable under the contract. In accordance with FAR 52.227-14, Rights in Data-General, the appendix must be appropriately marked and identified.

Further, if this award authorizes the awardee under the provisions of The Energy Policy Act of 1992 to request protection from public disclosure for a limited period of time of certain information developed under this award, technical reports SHALL NOT contain such Protected EAct Information. Such information shall be submitted in a separate appendix to the technical report that is suitable for release after the agreed upon period of protection from public disclosure has expired. The appendix shall be referenced in, but not incorporated into, the sanitized technical report deliverable under the contract. In accordance with the clause titled "Obligations as to Protected Energy Policy Act (EAct) Information," the appendix must be appropriately marked and identified.

All TECHNICAL REPORTS submitted to the DOE MUST be accompanied by a completed and signed NETL F 510.1-5, addressing potentially patentable information.

4.10 TECHNICAL PROGRESS REPORT (ANNUAL, QUARTERLY, AND SEMI-ANNUAL (MAY 1999))

The body of the report should contain a full account of progress, problems encountered, plans for the next reporting period, and an assessment of the prospects for future progress.

The Technical Progress Report should include sufficient detail to allow the work to be reproduced by others. Results and reduced data shall be presented together with a discussion of the relevance of the findings. When experimental systems and/or procedures are being utilized for the first time, they shall be described in detail. This description shall contain detailed information on equipment and procedures utilized, as well as providing a rationale for their use. All data reduction and transformation methods shall be fully documented. For every fourth calendar quarter for quarterly reports or every second half year for semi-annual reports, the report should be expanded to provide for detailed information on the results of the past year, problems encountered, significant accomplishments, listing of publications, presentations, and approaches to be taken the following year.

Informational items in technical progress reports shall include:

Experimental Apparatus -- A comprehensive description, including dimensioned drawings or sketches, of the apparatus and associated diagnostic measurement equipment employed to perform the experimental research.

Experimental and Operating Data -- All experimental data acquired during the course of research including detailed characterization of the sample materials subjected to experimentation.

Data Reduction -- A complete description of the methods employed to transform raw measured data into a form usable for interpretation along with any assumptions or restrictions inherent in the method and the resultant reduced data.

Hypothesis and Conclusions -- Logic for drawing conclusions or developing hypotheses shall be clearly stated along with applicable assumptions or restrictions.

4.11 TOPICAL REPORT (MAY 1999)

These reports usually provide a comprehensive statement of the technical results of the work performed for a specific task or subtask of the Statement of Project Objectives, or detail significant new scientific or technical advances. If required, DOE shall review and approve the report outline prior to submission of the report.

4.12 FINAL TECHNICAL REPORT (AUG 2000)

The Final Report shall document and summarize all work performed during the award period in a comprehensive manner. It shall also present findings and/or conclusions produced as a consequence of this work. This report shall not merely be a compilation of information contained in subsequent quarterly, or other technical reports, but shall present that information in an integrated fashion, and shall be augmented with findings and conclusions drawn from the research as a whole.

4.13 GUIDELINES FOR ORGANIZATION OF TECHNICAL REPORTS (DEC 1999)

The following sections should be included (as appropriate) in technical reports in the sequence shown. Any section denoted by an asterisk is required in all technical reports.

TITLE PAGE* - The Title Page of the report itself must contain the following information in the following sequence:

Report Title

Type of Report (Quarterly, Semi-Annual, Annual, Topical, Final)

Reporting Period Start Date

Reporting Period End Date

Principal Author(s)

Date Report was Issued (Month [spelled out] and Year [4 digits])

DOE Award Number (e.g., DE-FG26-01NT12345) and if appropriate, task number

Name and Address of Submitting Organization (This section should also contain the name and address of significant subcontractors or subrecipients who participated in the production of the report.)

DISCLAIMER* -- The Disclaimer must follow the title page, and must contain the following paragraph:

“This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.”

ABSTRACT* - should be a brief, concise summary of the report.

TABLE OF CONTENTS*

LIST(S) OF GRAPHICAL MATERIALS

INTRODUCTION

EXECUTIVE SUMMARY - this should be a well organized summary that highlights the important accomplishments of the research during the reporting period. It should be no less than one page and no more than two pages in length, and should be single spaced. This summary must be more comprehensive than the traditional “abstract.”

EXPERIMENTAL* - this should describe, or reference all experimental methods being used for the research. It should also provide detail about materials and equipment being used. Standard methods can be referenced to the appropriate literature, where details can be obtained. Equipment should be described only if it is not standard, or if information is not available thru the literature or other reference publications.

RESULTS AND DISCUSSION* - It is extremely important that this section includes enough relevant data, especially statistical data, to allow the project manager to justify the conclusions. With the relevant data, explain how the data was interpreted and how it relates to the original purpose of the research. Be concise in the discussion on how this research effort solved or contributed to solving the original problem.

CONCLUSION* - The conclusion should not simply reiterate what was already included in the “Results and Discussion” section. It should, however, summarize what has already been presented, and include any logical implications of how the successes are relevant

to technology development in the future. This is extremely important, since “relevancy” continues to be a criteria of the program.

REFERENCES*

BIBLIOGRAPHY

LIST OF ACRONYMS AND ABBREVIATIONS

APPENDICES (IF NECESSARY)

Company Names and Logos -- Except as indicated above, company names, logos, or similar material should not be incorporated into reports.

Copyrighted Material -- Copyrighted material should not be submitted as part of a report unless written authorization to use such material is received from the copyright owner and is submitted to DOE with the report.

Measurement Units -- All reports to be delivered under this instrument shall use the SI Metric System of Units as the primary units of measure. When reporting units in all reports, primary SI units shall be followed by their U.S. Customary Equivalents in parentheses ().

The Recipient shall insert the text of this clause, including this paragraph, in all subcontracts under this award.

Note: SI is an abbreviation for "Le Systeme International d'Unites."

4.14 ELECTRONIC MEDIA STANDARD FOR PREPARATION OF TECHNICAL REPORTS (DEC 1999)

FILE FORMAT

Production of high-quality, electronic documents is dependent on the quality of the input that is provided. Thus, the Recipient shall

submit one good quality paper copy using either permanent or alkaline paper plus an electronic version of each technical report.

ELECTRONIC REPORTS SHALL BE SUBMITTED IN THE ADOBE ACROBAT PORTABLE DOCUMENT FORMAT (PDF). ELECTRONIC REPORTS SUBMITTED IN A FORMAT OTHER THAN ADOBE WILL BE RETURNED AND THE REPORT CONSIDERED DELINQUENT.

Each report shall be an integrated file that contains all text, tables, diagrams, photographs, schematics, graphs, and charts.

SUBMISSION FORMAT

The electronic file(s) shall be submitted via diskette or CD-ROM. Diskettes or CD-ROMs must be labeled as follows:

DOE Award Number
Type/Frequency of Report(s)
Reporting Period (if applicable)
Name of submitting organization
Name, phone number and fax number of preparer

Diskettes -- Diskettes must be 3.5" double-sided, high-density (1.4 M Byte capacity). If file compression software is used to transmit a PDF file spanning more than one diskette, PKZIP from PKWare, Inc., is the required compression software. State the number of diskettes in the set (e.g., 1/3)

CD-ROM -- The electronic file(s) may be submitted on an ISO9660-format CD-ROM.

FILE NAMING

In naming the electronic file, the Recipient shall use the standard eight-character naming convention for the main file name, and the three character extension applicable to the software use, e.g., .pdf for Adobe.

For the main file name, the first five characters are the last five digits from the award number; e.g., for Award Number DE-FG26-97NT12345, the first five characters are 12345.

The next character represents the technical report and will always be designated as “R”.

The remaining two characters indicate the chronological number of the particular type of report; e.g., Quarterly Technical Progress Reports for a 5-year award are numbered R01 through R20. Thus, the main file name for the sixth Quarterly Technical Progress Report under Award No. DE-FG26-01NT12345 would be 12345R06.PDF. If monthly, quarterly, annual, and a final technical report are required, the numbers would run from R01 through R86 (60 monthly reports, 20 quarterly reports, 5 annual reports, and 1 final report).

4.15 ENVIRONMENTAL (OCT 2000)

In response, in part, to the requirements of the National Environmental Policy Act of 1969 (NEPA) and other related environmental statutes, the National Energy Technology Laboratory (NETL) requires the submission of various documents that assess the environmental aspects and projected impacts of all of its proposed actions. These documents may include the following: (1) Hazardous Substance Plan, (2) Hazardous Waste Report, (3) Environmental Compliance Plan, (4) Environmental Monitoring Plan, and (5) Environmental Status Reports.

The environmental information provided in these documents will enable NETL to fulfill its responsibilities under NEPA (additional information about the requirements of the National Environmental Policy Act can be found in the DOE NEPA Compliance Guide and 10 CFR 1021) and to monitor the Recipient's compliance with other environmental regulations. The implementation of any task associated with a proposed action will be dependent upon DOE completing necessary NEPA documentation. Therefore, to minimize the risk of project delays, it is imperative that these reports be submitted in a timely manner.

The information contained herein specifies the basic environmental requirements for this award, but it is not to be interpreted as containing all necessary information for any given project. Likewise, certain aspects of the requirements may not be applicable. Accordingly, the level of information provided should be sufficient for DOE to assess the environmental implications of the proposed action.

4.16 HAZARDOUS SUBSTANCE PLAN (MAY 1999)

The Recipient shall submit a Hazardous Substance Plan not later than thirty (30) days after initial award. The Plan shall specifically identify each Hazardous Substance (as defined under 40 CFR 261, Subpart D, entitled Lists of Hazardous Wastes) anticipated to be purchased, utilized or generated in the performance of this award. For each such Hazardous Substance identified, the Plan shall specifically provide the following information:

- Description of Substance/Chemical
- EPA Hazardous Waste Number
- EPA Hazard Code
- Anticipated Quantity to be purchased, utilized or generated
- Anticipated Hazardous Waste Transporter
- Anticipated Hazardous Waste Disposal Facility Contractor and Location (City/Municipality/State)

Anticipated Treatment Method

4.17 HAZARDOUS WASTE REPORT (MAY 1999)

The Recipient shall submit a Hazardous Waste Report at the completion of award performance. The Report shall specifically identify each Hazardous Waste (as defined under 40 CFR 261, Subpart D, entitled Lists of Hazardous Wastes) actually utilized, or generated in the performance of this award. For each such Hazardous Waste identified, the Report shall specifically provide the following information:

- Description of Substance/Chemical
- EPA Hazardous Waste Number
- EPA Hazard Code
- Actual Quantity Disposed
- Actual Hazardous Waste Transporter
- Actual Hazardous Waste Disposal Facility Contractor and Location (City/Municipality, State)
- Actual Disposal Date
- Actual Treatment Method

The Hazardous Waste Report is intended as a final reconciliation of anticipated versus actual Hazardous Substances purchased, utilized, or generated in the performance of this award.

4.18 PROPERTY REPORTS (DEC 1999)

The NETL Property Handbook entitled "Management of Government Property in the Possession of Contractors," contains forms, instructions, and suggested formats for submission of property reports. This handbook can be found at <http://www.netl.doe.gov/business/index.html>.

4.19 REPORT OF TERMINATION OR COMPLETION INVENTORY (SF-1428 AND SF-120) (SEP 2000)

This report submitted on the NETL F 580.1-9 is due immediately upon completion or termination of the award. The SF-120 is also required if there is Government-furnished property involved. The Recipient is required to perform and cause each subcontractor to perform a physical inventory, adequate for disposal purposes, of all Government property applicable to the award.

4.20 HOT LINE REPORT (NOV 2000)

The "Hot Line Report" may be used to report a major breakthrough in research, development, or design; an event causing a significant schedule slippage or cost growth; an environmental, safety and health violation; achievement of or failure to achieve an important technical objective; or any requirement for quickly documented direction or redirection. The report shall be submitted by the most rapid means available, usually electronic, and should confirm telephone conversations with DOE representatives. Identification as a "Hot Line Report" serves notice at each link in the delivery chain that expedition in handling is required. Unless otherwise agreed by the parties involved, DOE is expected to take action and respond in a similarly timely manner. The report should include:

1. Recipient's name and address;
2. Award title and number;
3. Date;
4. Brief statement of problem or event;
5. Anticipated impacts; and
6. Corrective action taken or recommended.

Hot line reports shall document the incidents listed below:

1. Any single fatality or injuries requiring hospitalization of five or more individuals is to be immediately reported.
2. Any significant environmental permit violation is to be reported as soon as possible, but within 24 hours of the discovery of the incident.
3. Other incidents that have the potential for high visibility in the media are to be reported as quickly as possible, but within 24 hours following discovery.
4. Any failure resulting in damage to Government-owned equipment in excess of \$50,000 is to be reported as quickly as possible, but within 24 hours of the discovery of the failure.
5. Any unplanned event which is anticipated to cause a schedule slippage or cost increase significant to the project is to be reported within 24 hours.
6. Any verbal or written Notice of Violation of any Environmental, Safety, and Health statutes arising from the performance of this award is to be immediately reported.
7. Any accidental spill or release which is in violation of any Environmental, Safety, and Health statutes arising from the performance of this award is to be immediately reported, but within 24 hours of the discovery of the accident.
8. Any incident which causes a significant process or hazard control system failure, or is indicative of one which may lead to any of the above defined incidents, is to be reported as soon as possible, but within 5 days of discovery.

The requirement to submit Hot Line Reports for the incidents identified in 1, 2, 3, 6, or 7 is for the sole purpose of enabling DOE officials to respond to questions relating to such events from the media and other public.

When an incident is reported in accordance with 4, 5, 6, 7, or 8, the Recipient shall conduct an investigation of its cause and make an assessment of the adequacy of resultant action. A written report is required no later than ten (10) calendar days following the incident and shall include an analysis of the pertinent facts regarding the cause, and a schedule of the remedial events and time periods necessary to correct the action.

When an event results in the need to issue a written or verbal statement to the local media, the statement is to be cleared first; if possible, and coordinated with NETL Communications and Public Affairs Division, the Contracting Officer Representative (COR) and the Contracting Officer.

4.21 JOURNAL ARTICLES, CONFERENCE PAPERS AND PROCEEDINGS GENERATED BY LARGE BUSINESSES FOR DOE REVIEW (SEP 2000)

The Recipient shall submit to DOE for review and approval all documents generated by the Recipient, or any subcontractor, which communicate the results of scientific or technical work supported by DOE under this award, whether or not specifically identified in the award, prior to submission for publication, announcement, or presentation. Such documents include journal articles, conference papers and proceedings, etc. Each such document shall be accompanied by a properly completed NETL Form 510.1-5, "Request for Patent Clearance for Release of Contracted Research Documents."

The Recipient shall simultaneously submit a draft version of the document to the DOE COR and the DOE Patent Counsel Office prior to the

publication, presentation, or announcement. The document submitted to the DOE Patent Counsel shall be accompanied by a completed NETL Form 510.1-5. The DOE COR and DOE Patent Counsel shall review the draft version of the document and notify the Recipient of approval or recommended changes. The approved final version shall be submitted to the NETL AAD Document Control Coordinator.

The following information shall be provided for conference papers and proceedings, etc.

- Name of conference
- Location of conference (city, state, and country)
- Date of conference (month/day/year)
- Conference sponsor

4.22 JOURNAL ARTICLES, CONFERENCE PAPERS AND PROCEEDINGS GENERATED BY A SMALL BUSINESS OR NONPROFIT ORGANIZATION FOR DOE REVIEW (SEPT 2000)

The Recipient shall submit to DOE for review and approval all documents generated by the Recipient, or any subcontractor, which communicate the results of scientific or technical work supported by DOE under this award, whether or not specifically identified in the award, prior to submission for publication, announcement, or presentation. Such documents include journal articles, conference papers and proceedings, etc. Each such document shall be accompanied by a properly completed NETL Form 510.1-5, "Request for Patent Clearance for Release of Contracted Research Documents."

The Recipient shall submit a draft version of the document to the COR prior to the publication, presentation, or announcement. The COR shall review the draft version of the document and notify the Recipient of approval or recommended changes. The final version, along with a

completed NETL Form 510.1-5, shall be submitted to the NETL AAD Document Control Coordinator.

The following information shall be provided for conference papers and proceedings, etc.

- Name of conference
- Location of conference (city, state, and country)
- Date of conference (month/day/year)
- Conference sponsor

4.23 JOURNAL ARTICLES, CONFERENCE PAPERS AND PROCEEDINGS GENERATED BY A UNIVERSITY FOR DOE REVIEW (SEPT 2000)

The Recipient shall submit to DOE for review and comment all documents generated by the Recipient, or any subcontractor, which communicate the results of scientific or technical work supported by DOE under this award, whether or not specifically identified in the award, prior to submission for publication, announcement, or presentation. Such documents include journal articles, conference papers and proceedings, etc. Each such document shall be accompanied by a properly completed NETL Form 510.1-5, "Request for Patent Clearance for Release of Contracted Research Documents."

The Recipient shall submit a draft version of the document to the COR prior to the publication, presentation, or announcement. The COR shall review the draft version of the document and notify the Recipient of recommended changes. The final version, along with a completed NETL Form 510.1-5, shall be submitted to the NETL AAD Document Control Coordinator.

The following information shall be provided for conference papers and proceedings, etc.

- Name of conference
- Location of conference (city, state, and country)
- Date of conference (month/day/year)
- Conference sponsor

4.24 ATTACHMENT C -- BUDGET PAGES (DEC 1999)

The budget documents (DOE Form 4620.1, ER F4620.1A, SF424 or the DOE 4600.4) will be inserted on this page upon award.

The Applicant must prepare the budget documents and include them in Volume I - Business and Financial Application. These documents and instructions for completion of the documents can be found on the NETL Homepage at:
<http://www.netl.doe.gov/business/forms/forms.html>

4.25 ATTACHMENT D -- RECIPIENT ACQUIRED PROPERTY
(AUG 1999)

Recipient acquired property will be listed on this page upon award.

SECTION V -- CONDITIONS AND NOTICES

5.0 NUMBER AND TYPE OF AWARDS (JAN 2000)

It is anticipated that there will be multiple awards resulting from this solicitation. However, the Government reserves the right to fund, in whole or in part, any, all, or none of the applications submitted in response to this solicitation and will award that number of financial assistance instruments which serves the public purpose and is in the best interest of the Government. The Government intends to use cooperative agreements as the type of award instrument(s).

5.1 COST SHARING REQUIREMENTS

In accordance with 10 CFR 600.30, the DOE has determined that a minimum cost share for this project is 50%. Cost sharing must meet the requirements of 10 CFR 600.123 and 10 CFR 600.224 and originate from non-federal sources. Allowable costs for cost sharing shall be in accordance with 10 CFR 600.127 and 10 CFR 600.222.

The Office of Industrial Technologies (OIT) requires a minimum of 50-percent, non-federal cost share across its entire portfolio of technology projects. This solicitation is requiring 50-percent cost share to ensure pro-active industrial involvement by industry and to encourage industry to commit to implementation of novel, energy-efficient processes. There will be no waivers of this cost-share requirement.

In evaluating the cost share, the percentage calculated from the cost information will be rounded to the nearest full percentage. Prior costs (e.g., costs for prior research, development, demonstration, patents, or technical reports) should not be proposed and will not be considered as cost share. Fee or profit will not be paid under any award, and foregone fee or profit will not be accepted as cost share.

If a U.S. Department of Energy (DOE) Laboratory is chosen as a teaming partner, its participation will be funded directly by DOE and the costs associated with the Laboratory's participation will count towards the Government's cost share, not the Applicant's cost share. Additionally, the recipient's cost-share requirement will be based on the total cost of the project including both the recipient and DOE laboratory portions of the effort.

5.2 CONTENT OF RESULTING AWARD (NOV 2000)

Any agreement awarded as a result of this solicitation will contain the applicable terms and conditions found in the Model Financial Assistance Agreement located at the NETL Website located at:

<http://www.netl.doe.gov/business/faapiaf/MODEL.PDF>

Blank areas appearing in the model agreement indicated by "[]" will be completed after negotiations.

5.3 APPLICATION PREPARATION COSTS (DEC 1999)

This solicitation does not obligate the Government to pay any costs incurred in the preparation and submission of applications, or in making necessary studies or designs for the preparation thereof or to acquire, or contract for any services.

5.4 COMMITMENT OF PUBLIC FUNDS (AUG 1999)

The Contracting Officer is the only individual who can legally commit the Government to the expenditure of public funds in connection with the proposed award. Any other commitment, either explicit or implied, is invalid.

5.5 AVAILABILITY OF FUNDS (AUG 1999)

It is estimated that \$2,500,000 will be available for award under this solicitation, subject to the availability of funds.

5.6 PRE-APPLICATION CONFERENCE IS NOT PLANNED (JULY 1999)

A pre-application conference is not contemplated.

5.7 FALSE STATEMENTS (AUG 1999)

Applications must set forth full, accurate, and complete information as required by this solicitation. The penalty for making false statements in applications is prescribed in 18 U.S.C. 1001.

5.8 QUESTIONS/AMENDMENTS TO SOLICITATION (AUG 2000)

All requests for explanation or interpretation of any part of the solicitation shall be submitted in writing and must be received by the Contract Specialist via E-mail or in writing not later than 2:00 p.m. local prevailing time on [TBD]. The Government reserves the right not to respond to questions submitted after this date, nor to respond to questions submitted by telephone or in person at any time.

The only method by which any term of this solicitation may be amended is by an express, formal amendment generated by the issuing office. No other communication, whether written or oral will amend or supersede the terms of this solicitation.

Amendments to the solicitation will be posted on NETL's website @ [**http://www.netl.doe.gov/business/solicit/**](http://www.netl.doe.gov/business/solicit/). Applicants are encouraged to periodically check the NETL Homepage to ascertain the status of any amendments as hard copies will not be distributed.

5.9 CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER (CFDA) (AUG 1999)

81.086 Conservation Research and Development

5.10 ELIGIBLE APPLICANTS

Any industrial company (a private for-profit or non-profit organization) that owns and operates an Industries of the Future (IOF) industrial facility where the technology will be implemented is eligible to apply, unless otherwise restricted by the Simpson-Craig Amendment (Reference Section 5.26 of this solicitation). Applicants are encouraged to propose a teaming arrangement that includes technology developers (industry, university, and national laboratories), technology vendors, and appropriate stakeholders (regulators, state and other federal programs).

In addition to the teaming arrangement proposed, DOE will select a third-party, independent verification entity, through a separate solicitation, to work with each awardee in producing the technology verification documentation.

Applicants that are seeking financial assistance under this solicitation, are subject to the eligibility requirements of Section 2306 of the Energy Policy Act of 1992 (EPAAct).

5.11 PARTICIPATION BY FEDERALLY FUNDED RESEARCH AND DEVELOPMENT CENTERS (FFRDC) AND DEPARTMENT OF ENERGY (DOE) MANAGEMENT AND OPERATIONS (M&O) CONTRACTORS (JAN 2000)

Applications submitted by, or on behalf of: (1) another Federal agency; (2) a Federally Funded Research and Development Center sponsored by another Federal agency; or (3) a Department of Energy (DOE) Management and Operating (M&O) contractor will not be eligible for an

award under this solicitation. However, an application that includes performance of a portion of the work by a DOE M&O contractor will be evaluated and may be considered for award, provided the proposed use of any such entity is specifically authorized in writing by the responsible DOE Contracting Officer or authorized designee and the applicant provides the additional information identified in Section VII - BUSINESS AND FINANCIAL PREPARATION INSTRUCTIONS. The responsible DOE Contracting Officer must determine that performance by the M&O contractor: 1) is consistent with or complementary to DOE missions and the missions of the facility to which the work is to be assigned; 2) will not adversely impact execution of assigned programs of the facility; 3) will not place the facility in direct competition with the domestic private sector; and 4) will not create a detrimental future burden on DOE resources.

If a project which includes M&O participation is approved for funding, DOE intends to make an award to the applicant for its portion of the effort and to provide direct funding for the M&O's portion of the effort under the existing DOE M&O contract.

The M&O contractor's work scope therefore will not be accomplished through a contract with a recipient as defined in 10 CFR Part 600.3. However, the recipient will be the responsible authority, without recourse to DOE, regarding the settlement and satisfaction of all contractual and administrative issues, including but not limited to disputes and claims, arising out of any agreement between the applicant and the M&O contractor.

If a recipient uses an M&O contractor to perform a portion of the work, the recipient's cost sharing requirement would be based on the total cost of the project, including both the recipient's and the M&O's portions of the effort.

5.12 TIME, DATE AND PLACE APPLICATIONS ARE DUE (NOV 2000)

Applications shall be submitted in paper media in sealed envelopes or packages addressed to the office and point of contact specified below:

APPLICATIONS MUST BE RECEIVED AT THE FOLLOWING MAILING ADDRESS NO LATER THAN 2:00 P.M. LOCAL PREVAILING TIME ON [TBD].

U. S. Department of Energy
National Energy Technology Laboratory
626 Cochran's Mill Road, MS 921-107
Pittsburgh, PA 15236-0940

Point of Contact : Larry D. Gillham
Telephone Number: 412-386-5817
Fax Number 412-386-6137
E-MAIL Address: gillham@netl.doe.gov

External Marking of Applications

Applications shall be marked with the following information:

- (1) Address of Proposer
- (2) Solicitation Number
- (3) Due Time and Date of Applications
- (4) Point of Contact at Issuing Office

5.13 FEE AND PROFIT (JULY 1999)

Fee or profit will not be paid to the recipients of financial assistance awards resulting from this solicitation.

5.14 DETERMINATION OF RESPONSIBILITY (AUG 1999)

DOE will evaluate the potential Recipient's responsibility before award. Responsibility determinations are focused on the Recipient's capability to manage and account for the funds, property and other assets provided to perform satisfactorily under the terms of the award. If a potential Recipient is determined to not be in compliance or cannot or will not comply with generally applicable requirements (see 10 CFR Part 600, Appendix A), the contracting officer will find the Recipient not responsible and may either disapprove the application or use special restrictive conditions as a term of award.

5.15 TREATMENT OF PROPRIETARY INFORMATION (AUG 1999)

An application may include technical data and other data, including trade secrets and/or privileged or confidential commercial or financial information, which the applicant does not want disclosed to the public or used by the Government for any purpose other than application evaluation. To protect such data, the applicant should specifically identify each page including each line or paragraph thereof containing the data to be protected and mark the cover sheet of the application with the following Notice as well as referring to the Notice on each page to which the Notice applies:

NOTICE OF RESTRICTION ON DISCLOSURE AND USE OF DATA

The data contained in pages [] of this application have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes, provided that if this applicant receives an award as a result of or in connection with the submission of this application, DOE shall have the right to use or disclose the data

therein to the extent provided in the award. This restriction does not limit the Government's right to use or disclose data obtained without restriction from any source, including the applicant.

DOE shall not refuse to consider an application solely on the basis that the application is restrictively marked.

5.16 TELEGRAPHIC AND E-MAIL APPLICATIONS (SEP 2000)

Telegraphic and e-mail applications will **NOT** be considered. The term "Telegraphic" includes both mailgrams and facsimile submissions.

5.17 LATE APPLICATIONS, AMENDMENTS AND WITHDRAWALS OF APPLICATIONS (AUG 2000)

An application or amendment of an application shall be timely if it is received at the location on or before the deadline date and time specified in this section.

Applications or amendments of applications may be withdrawn by written notice at any time before award. Written notice includes E-mails and facsimiles. An authorized representative may withdraw applications in person, if the representative's identity is made known and the representative signs a receipt for the application before award. Applications will not be returned unless they are timely withdrawn.

5.18 EVALUATION PERSONNEL (AUG 2000)

Applications will be evaluated in accordance with the criteria set forth in Section VI of the solicitation. In conducting this evaluation, the Government may utilize assistance and advice from qualified personnel from other Federal Agencies, DOE Contractors, universities and industry. Applicants not wishing to have their application evaluated by nonfederal personnel shall indicate their "non-consent" in Volume I. Applicants are

further advised that DOE may be unable to consider an application withholding such consent.

When using personnel from other Federal agencies, DOE contractors, or other consultants to DOE in the evaluation of applications, DOE will obtain assurances from all evaluators that DOE's commitments are met relating to the proprietary nature of any application information.

5.19 APPLICATION CLARIFICATION (JULY 1999)

DOE reserves the right to require applications to be clarified or supplemented to the extent considered necessary either through additional written submissions or oral presentations.

5.20 AWARD WITHOUT DISCUSSIONS (AUG 2000)

Notice is given that award may be made after few or no exchanges, discussions or negotiations. Therefore, all applicants are advised to submit their most favorable application to the Government. The Government reserves the right, without qualification, to reject any or all applications received in response to this solicitation and to select any application, in whole or in part, as a basis for negotiation and or award.

5.21 ANTICIPATED SELECTION AND AWARD DATES (AUG 1999)

It is anticipated that selections for award will be made by [TBD]. Awards are expected to be made within 60 calendar days following the selection.

5.22 APPLICATION ACCEPTANCE PERIOD (AUG 1999)

The minimum application acceptance period shall be 180 calendar days after the deadline(s) for receipt of applications.

5.23 PRESUBMISSION REVIEW AND CLEARANCES (AUG 1999)

Presubmission review under Executive Order 12372, "Intergovernmental Review of Federal Programs" is not required.

5.24 PROJECT PERIOD (AUG 2000)

The Government anticipates the project period for the subject awards will not exceed 18 months with a follow-on five year data gathering period. Awards will have one project and budget period.

5.25 SIMPSON-CRAIG AMENDMENT (AUG 1999)

Organizations which are described in section 501(c)(4) of the Internal Revenue Code of 1986 and engage in lobbying activities after December 31, 1995, shall not be eligible for the receipt of Federal funds constituting an award, grant, or loan. Section 501(c)(4) of the Internal Revenue Code of 1986 covers:

“Civic leagues or organizations not organized for profit but operated exclusively for the promotion of social welfare, or local associations of employees, the membership of which is limited to the employees of a designated person or persons in a particular municipality, and the net earnings of which are devoted exclusively to charitable, educational or recreational purposes.”

Lobbying activities are defined broadly to include, among other things, contacts on behalf of an organization with specified employees of the Executive Branch and Congress with regard to Federal legislative, regulatory and program administrative matters.

5.26 LOANS NOT AVAILABLE (JULY 1999)

Loans are not available under the DOE Minority Economic Impact (MEI) loan program, 10 CFR Part 800, to finance the cost of preparing a financial assistance application.

5.27 DEBRIEFINGS (AUG 2000)

Each unsuccessful applicant will be offered the opportunity for an explanation or debriefing as to why the application was not selected. Debriefings will be conducted at the earliest feasible time. Written notice will be provided to unsuccessful applicants after selection in accordance with 10 CFR 600.19. Information about selected projects will be made publicly available.

5.28 ADDITIONAL ELIGIBILITY REQUIREMENTS OF THE ENERGY POLICY ACT OF 1992 (JULY 1999)

Awards under this solicitation also are subject to the eligibility requirements stated in Section 2306 of the Energy Policy Act of 1992 (EPAct). An applicant private sector firm shall be eligible to receive financial assistance under this section only if it is a United States-owned company, or the firm is incorporated in the United States and has a parent company which is incorporated in a country which affords to United States-owned companies: (1) opportunities comparable to those afforded to any other company to participate in any joint venture similar to the one described in this solicitation; and (2) adequate and effective protection for United States companies' intellectual property rights.

In addition, the applicant must show that the project, as a whole, is in the economic interest of the United States. To fulfill this requirement, the applicant must consider the contributions of all participants in the project, including any contractors or suppliers that the applicant has named and relied upon in its application. This can be evidenced by: (1) investment in the United States in research, development, and manufacturing, such as the manufacture of major components or

subassemblies in the United States; (2) significant contributions to employment in the United States; (3) agreement with respect to any technology arising from assistance provided under this solicitation to promote the manufacture within the United States of products resulting from that technology, taking into account the goals of promoting the competitiveness of United States industry, and to procure parts and materials from competitive suppliers.

All applicants shall complete documentation providing a certification of eligibility under Section 2306 of the EAct. Based on the information received, a determination by DOE that the EAct eligibility requirements are met should be made prior to award of an agreement.

5.29 NATIONAL ENVIRONMENTAL POLICY ACT STRATEGY **(NOV 2000)**

The National Environmental Policy Act of 1969 (NEPA) establishes a national policy to ensure that consideration is given to environmental values and factors in Federal planning and decision making. The Department of Energy's policy is to comply fully with the letter and spirit of NEPA. To ensure that environmental factors are considered in the decision making process and to promote environmentally responsible decisions, DOE incorporates NEPA requirements early in the planning process for proposed actions. Consistent with Council on Environmental Quality (CEQ) NEPA regulations (40 CFR Parts 1500-1508) and DOE NEPA regulations (10 CFR Part 1021), an overall strategy for compliance with NEPA has been developed. This includes performing project-specific environmental reviews under 10 CFR 1021.216 of environmental issues pertinent to each proposed project before projects are selected, followed by site-specific environmental reviews under NEPA of each project after DOE selection.

No action taken by DOE with regard to any application prior to the completion of the site-specific analysis, including project selection or award, shall be a final decision for purposes of compliance with NEPA.

5.30 PRE-SELECTION PROJECT-SPECIFIC ENVIRONMENTAL QUESTIONNAIRE (DEC 1999)

For Applications that undergo comprehensive evaluation, DOE will review under 10 CFR 1021.216, project-specific environmental information supplied by the applicant on the Environmental Questionnaire which is submitted as part of Volume I, Business and Financial application. The environmental information provided by the applicant is independently evaluated by DOE and documented in the form of an environmental critique, which may also include supplemental information developed by DOE. Subsequently, DOE prepares a publicly available environmental synopsis to document the consideration given to environmental factors and to record that the relevant environmental consequences of reasonable alternatives have been evaluated in the selection process.

5.31 POST-SELECTION ENVIRONMENTAL REVIEW (DEC 1999)

Soon after selection, which shall be contingent as specified in 10 CFR 1021.216(i), depending on the information necessary to satisfy NEPA, applicants may be requested to provide additional environmental information which is more detailed than that provided on the Environmental Questionnaire of this solicitation. This detailed site-and project-specific information may be used as the basis for site-specific NEPA documents prepared by DOE for each selected project. Such NEPA documents shall be prepared, considered, and published by DOE in full conformance with the requirements of the CEQ regulation and DOE NEPA regulations. DOE must complete its appropriate NEPA process before a go/no go decision and before a recipient may proceed with detailed design under the award.

5.32 POST-AWARD ENVIRONMENTAL MONITORING (DEC 1999)

Each resulting award will specify the monitoring and reporting requirements necessary to ensure compliance with applicable environmental regulations, and permits obtained from Federal, state and local government agencies and DOE NEPA regulations.

5.33 52.227-6 ROYALTY INFORMATION. (APR 1984)

(a) Cost or charges for royalties. When the response to this solicitation contains costs or charges for royalties totaling more than \$250, the following information shall be included in the response relating to each separate item of royalty or license fee:

- (1) Name and address of licensor.
- (2) Date of license agreement.
- (3) Patent numbers, patent application serial numbers, or other basis on which the royalty is payable.
- (4) Brief description, including any part or model numbers of each contract item or component on which the royalty is payable.
- (5) Percentage or dollar rate of royalty per unit.
- (6) Unit price of contract item.
- (7) Number of units.
- (8) Total dollar amount of royalties.

(b) Copies of current licenses. In addition, if specifically requested by the Contracting Officer before execution of the contract, the offeror shall furnish a copy of the current license agreement and an identification of applicable claims of specific patents.

5.34 952.227-84 NOTICE OF RIGHT TO REQUEST PATENT WAIVER. (FEB 1998)

Offerors have the right to request a waiver of all or any part of the rights of the United States in inventions conceived or first actually reduced to practice in performance of the contract that may be awarded as a result of this solicitation, in advance of or within 30 days after the effective date of contracting. Even where such advance waiver is not requested or the request is denied, the contractor will have a continuing right under the contract to request a waiver of the rights of the United States in identified inventions, i.e., individual inventions conceived or first actually reduced to practice in performance of the contract. Domestic small businesses and domestic nonprofit organizations normally will receive the patent rights clause at DEAR 952.227-11 which permits the contractor to retain title to such inventions, except under contracts for management or operation of a Government-owned research and development facility or under contracts involving exceptional circumstances or intelligence activities. Therefore, small businesses and nonprofit organizations normally need not request a waiver. See the patent rights clause in the draft contract in this solicitation. See DOE's patent waiver regulations at 10 CFR part 784.

5.35 NOTICE REGARDING ELIGIBLE/INELIGIBLE ACTIVITIES (AUG 1999)

Eligible activities under this program include those which describe and promote the understanding of scientific and technical aspects of specific energy technologies, but not those which encourage or support political

activities such as the collection and dissemination of information related to potential, planned or pending legislation.

5.36 UNNECESSARILY ELABORATE APPLICATIONS (SEP 2000)

Unnecessarily elaborate applications beyond those sufficient to present a complete and effective response to this solicitation are not desired. Elaborate art work and expensive visual presentations are neither necessary nor wanted.

5.37 APPLICATION PREPARATION INSTRUCTIONS -- GENERAL

- (a) General. Application content, preparation, and delivery must conform to the solicitation instructions. To aid in evaluation, applications shall be clearly and concisely written as well as being neat, indexed (cross-indexed as appropriate) and logically assembled. All information prescribed by the solicitation package shall be included in the application package.

Each volume is a stand alone document, therefore, some information provided may need to be included in both volumes.

- (b) Overall Arrangement of Application.

The overall application shall consist of two (2) physically separated volumes, individually entitled as stated below. Submit the required number of each application volume shown in the matrix below. Each volume shall employ the cover sheets as described in the Appendices's instructions.

Volume	Original	Number of Copies	Electronic Version*
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Volume I -- Business and Financial Application	1	3	--
Volume II -- Technical Application	1	6	1

- * Electronic version of the technical application shall be submitted via diskette or CD-ROM in Adobe Acrobat Portable Document Format, WordPerfect, or Word. Applicants can choose to submit the entire Volume II electronically, or at a minimum, provide the Proposal Supplemental Form, Abstract, Workplan and Statement of Project Objectives electronically.

(c) Content of Applications.

1. Volume I -- Business and Financial Application preparation instructions are located in Section VII, Appendix A.
2. Volume II -- Technical Application preparation instructions are located in Section VIII, Appendix B.

SECTION VI -- EVALUATION CRITERIA AND PROGRAM POLICY FACTORS

6.1 INTRODUCTION (MAY 2000)

This section contains the evaluation approach as well as the individual criteria to be used in the evaluation of applications.

6.2 GENERAL

It is the policy of DOE that any financial assistance be awarded through a merit-based selection process which means a thorough, consistent and independent examination of applications based on pre-established criteria by persons knowledgeable in the field of the proposed project.

All technical applications will be subject to a two-step evaluation process, i.e., a screening evaluation against qualification criteria and a merit review against selection criteria. Only those proposals that meet all of the qualification criteria and all other requirements of the solicitation will proceed to the merit review. Selections will be made in accordance with the merit review and programmatic considerations.

6.3 PRELIMINARY EVALUATION

Prior to a comprehensive evaluation, applications will undergo an initial review against the following qualification criteria:

- * The proposed technology has undergone a completed pilot-scale or field demonstration and is currently ready for plant implementation;
- * The proposal identifies a minimum of 50-percent, non-federal cost share of the overall implementation cost;
- * The project duration is less than 18 months to complete the proposed implementation;

- * The three tables for energy savings, environmental savings, and commercialization market are completed; and
- * All of the required forms are completed and signed by an individual(s) with appropriate authority, including the SF-424, the FA-CERTS, and the Standard Form-LLL, if applicable.

An application that fails to meet any one of these qualification criteria may be eliminated from the process, and thus it may not proceed to the next step of merit review. In the event that an application is eliminated, a notice will be sent to the applicant stating the reason(s) that the application will not be considered for negotiations leading to award under this solicitation.

6.4 COMPREHENSIVE EVALUATION (AUG 1999)

Applications passing the preliminary evaluation shall be subject to a comprehensive evaluation in accordance with the technical evaluation criteria listed in this section.

The technical evaluation is conducted to determine the merits of the technical application with regard to the potential success of the project as well as future commercial applications. Comprehensive evaluation results in a numerical score for each application against each of the technical evaluation criteria.

The Environmental, Health, Safety, and Security (EHSS) Evaluation, which is not point scored, is conducted to determine the completeness of the Environmental Questionnaire, and to assess the applicant's awareness of EHSS requirements for mitigating project related EHSS risks and impacts.

The cost evaluation, which is not point scored, is conducted to determine the completeness of the cost estimate, appropriateness and reasonableness

of the cost, and to assess the applicant's understanding of the Statement of Project Objectives.

6.5 TECHNICAL EVALUATION CRITERION (AUG 1999)

Technical applications submitted in response to this solicitation will be evaluated and scored in accordance with the criteria listed below:

Criterion 1 Scientific and Technical Merit (Weight 20%)

The application will be evaluated based on the overall scientific and technical merit of the proposed technology, its maturity status, and the Industries of the Future (IOF) industry needs being addressed.

- Applications will be evaluated on the adequacy of the discussion of the performance history of the proposed technology or process to illustrate its readiness, viability, and potential for plant implementation.
- Applications will be evaluated on the adequacy of the discussion to illustrate that the technology/process has been previously demonstrated and upon the adequacy of specific performance data. (Note - fundamental process flow diagrams should be submitted with discussion of technical details (as available) of the technology and system proposed for implementation.)

Where the application includes a technology/process developed by the Office of Industrial Technologies (OIT), the application shall include the project identification number in the OITIS (OIT Information System) database. The OITIS project ID can be found in the table of exemplary OIT technologies in Appendix C of this solicitation or by contacting the respective program manager listed on <http://www.oit.doe.gov/phone.shtml>. The application should also identify the IOF industrial sectors that would be directly impacted by the proposed technology.

- Applications will be evaluated on the discussion of how the proposed technology correlates with the priority research and development needs identified in the IOF technology roadmaps.

Criterion 2 Energy, Environmental, and Economic Benefits (Weight 40%)

- The application will be evaluated based on the total energy savings, improvement in environmental performance, and economic benefits projected to result across the IOF sectors.

Describe how the proposed technology as compared to the current technology will significantly enhance energy efficiency, environmental performance, and economic competitiveness across the IOF sectors. Provide a brief description of the current baseline technology and process and justify the benefits of the proposed implementation over baseline practice based on or projected from the previous demonstration results. The comparative benefit analysis between the proposed technology and the current technology should be conducted at a system level, inclusive of the overall effect on the plant energy systems such as the motors, steam, compressed air, and process heating systems. Notwithstanding these benefits, explain why U.S. industry is not actively implementing the proposed technology and why federal financial assistance is needed for implementation. Complete the three tables included in Appendix B of this solicitation. Provide the assumptions and detailed calculations of energy savings, environmental savings, and resultant economic benefit to the overall IOF sectors.

- The evaluation will consider the adequacy of the technical merit information and assumptions provided for calculating the individual benefits as well as the thoroughness of the completed three tables in Appendix B.

Criterion 3 Project Plan (Weight 20%)

- The application will be evaluated based on the soundness of the proposed implementation plan in regard to scope, cost, and schedule, and the adequacy of the management structure.

Describe the project goals, scope of work, and objectives. Provide an implementation schedule outlining key milestone events and schedules. Identify and describe decision points and go/no-go decision criteria. Provide a spending plan by key milestone and decision point. Provide a description of and justification for needed facilities and equipment with associated estimated costs. Provide budget justification and sources concerning proposed costs in sufficient detail to allow the U.S. Department of Energy (DOE) to verify cost-share contributions, percentages, and source. Describe the project organization and individual responsibilities. Describe how tasks will be integrated among the participants and how the project will be coordinated. Describe the project management structure. Discuss the management philosophy for achieving project success.

With regard to technology verification, provide a plan for data acquisition, handling, analysis, and quality assurance. Describe how the project team will work with the third-party, independent verification entity to provide the needed data set for verification and provide the timeline for such data delivery.

Criterion 4 Applicant/Team Capabilities and Facilities (Weight 10%)

- The application will be evaluated based on the quality, availability, and appropriateness of key personnel and facilities, as well as on corporate experience and success in technology implementation.

Identify the participating members of the team and the unique strengths, skills, and capabilities of each member. Provide brief resumes of key personnel, describe their responsibilities and related experience, and identify individual levels of effort. Describe relevant facilities and equipment that will be available and required for use on this project. Describe the demonstrated current corporate experience and success in similar projects resulting in successful technology implementation and commercialization.

A multi-disciplinary team approach will be preferred, which involves material participation of technology providers, users at industrial plants, technology vendors, and appropriate stakeholders.

Criterion 5 Replication Plan (Weight 10%)

- The application will be evaluated based on commitment to a viable mechanism, plan, or path that leads to subsequent additional implementations of the technology and on the resulting broad-based benefits.

Provide a plan and schedule for replication of the implementation by the project team at other plant locations. Describe how the technology will be made available to a wide cross-section of industrial sectors at the earliest practicable time. Discuss intellectual property rights relating to such a broad implementation and institutional alliances to execute the multi-implementation strategy.

It shall be noted that the funds resulting from the award of this solicitation shall not be used to support the replication work, and that the costs of replication(s) shall not be included in the overall project cost or in the cost-share calculation.

6.6 COST EVALUATION CRITERIA (JULY 1999)

The costs proposed will be evaluated in response to this solicitation in order to:

- (a) determine the level of verifiable cost sharing,
- (b) ensure that all work elements included in the Statement of Project Objectives have associated costs, and that those costs appear appropriate and reasonable for the effort performed; and
- © assess the applicant's understanding of the Statement of Project Objectives.

6.7 RELATIVE ORDER OF IMPORTANCE OF EVALUATION CRITERIA (NOV 2000)

The evaluation of the technical application will be conducted using preestablished weights to determine the relative merits of the application in accordance with the technical evaluation criteria. The technical evaluation (Volume II - Technical Application) represents 100% of the total evaluation scoring. Although Volume I - Business and Financial Application will not be point scored, it will be considered in the selection decision and must be addressed.

The following weighting factors will be applied to each technical evaluation criteria to obtain a final evaluation rating for each application.

1.	Technical Merit	20%
2.	Energy, Environmental, and Economic Benefits	40%
3.	Project Plan	20%
4.	Applicant/Team Capabilities and Facilities	10%
5.	Replication Plan	10%

6.8 APPLICATION OF PROGRAM POLICY FACTORS (NOV 2000)

These factors, while not indicators of the Applicant's merit, e.g., technical excellence, cost, proposer's ability, etc., may be essential to the process of selecting the application(s) that, individually or collectively, will best achieve the program objectives. Such factors are often beyond the control of the Applicant. Applicants should recognize that some very good applications may not receive an award because they do not fit within a mix of projects which maximizes the probability of achieving the DOE's overall research and development objectives. Therefore, the following Program Policy Factors may be used by the Source Selection Authority (SSA) to assist in determining which of the ranked application(s) shall receive DOE funding support:

- Fulfillment of delivery and industrial use of those technologies that have been supported under the OIT/industry partnerships

(i.e., preference of OIT-supported technologies over non-OIT technologies described in previous sections),

- A portfolio of diverse technologies to provide overall, balanced support to all IOF industrial sectors,
- A higher percent of cost share than the minimum required, thereby maximizing the effectiveness of available Government funding,
- Complementary work to existing or planned work identified by other federal programs, and
- Geographic diversity that will benefit the nation and not just benefit a specific region or city.

6.9 PROGRAMMATIC SOURCE OF FUNDS

DOE shall select a project(s) for award that best satisfy the budget authorities of available programmatic funding sources. [This solicitation is intended as a vehicle for supporting Office of Industrial Technologies programs.]

6.10 BASIS FOR SELECTION AND AWARD (MAY 2000)

The Department of Energy anticipates the award of one or more financial assistance instruments to those applicants whose applications are determined to be in the best interest of the Department in achieving the program objectives set forth in this solicitation. Selection of an application by the Department will be achieved through a process of evaluating and comparing the relative merits of

the applicant's complete application, in accordance with all of the evaluation factors set forth in this Section.

This process reflects the Department's desire to accept an application based on its potential in best achieving program objectives, rather than solely on evaluated technical merit or cost. Accordingly, the Department of Energy may select for award all, none, or any number or part, of an application, based on its decision as to which meritorious applications best achieve the program objectives set forth in this solicitation.

It is important for applicants to note that selection for negotiations will be made entirely on the basis of the applications submitted. Applications should, therefore, address specifically the factors mentioned in the evaluation criteria, and not depend upon reviewers' background knowledge.

SECTION VII -- APPENDIX A

**BUSINESS AND FINANCIAL APPLICATION PREPARATION
INSTRUCTIONS FOR SOLICITATION NUMBER:
DE-PS26-01NT41094**

This is the Proposal Coversheet for Volume I and shall be provided with the original and each copy of Volume I.

VOLUME I
BUSINESS AND FINANCIAL APPLICATION COVERSHEET
DE-PS26-01NT41094

Application No. _____

(For official use only)

Application Date: _____

Acceptance Days: _____

Application Title: _____

Company Name: _____

Address: _____

Point of Contact: _____

Telephone/FAX Number: _____

PROPRIETARY INFORMATION: Does this submittal contain Trade Secrets or Proprietary Information?

_____ NO

_____ YES (if yes, complete box below)

NOTICE OF RESTRICTIONS ON DISCLOSURE AND USE OF DATA

The data contained on pages _____ of this application have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes, provided that if this applicant receives an award as a result of or in connection with the submission of this application, DOE shall have the right to use or disclose the data herein to the extent provided in the award. This restriction does not limit the Government's right to use or disclose data obtained without restriction from any source, including the applicant.

**SECTION VII -- APPENDIX A -- BUSINESS AND FINANCIAL
APPLICATION PREPARATION INSTRUCTIONS
FOR SOLICITATION NUMBER DE-PS26-01NT41094**

7.1 GENERAL

1. Volume I, Business and Financial Application, consists of an application coversheet, application forms, assurances, budget pages, supporting cost data requirements, environmental questionnaire, other statements of the offeror, exceptions and deviations to the model cooperative agreement award, and any other business and financial information.
2. The application identified as the original shall contain all of the original signatures of all the documents requiring signature by the applicant. Use of reproductions of signed originals is authorized in all other copies of the application.
3. The applicant shall not provide application information in three-ring binders.
4. The Applicant shall provide a minimum cost share of 50 percent of the total estimated cost of the project (not 50 percent of the Government's share.)

7.2 FORMAT AND CONTENT

ALL FORMS NEEDED FOR PREPARATION OF VOLUME I ARE FOUND ON THE NETL HOMEPAGE AT:

<http://www.netl.doe.gov/business/forms/forms.html>. PLEASE NOTE THAT ALL FORMS WERE DEVELOPED USING WORDPERFECT 6.1 AND FORMATTED FOR PRINTING USING A HP LASERJET IIISi PRINTER. INSTRUCTIONS FOR COMPLETION OF THE FORMS ARE CONTAINED

ON THE BACK OF EACH FORM. QUESTIONS ON COMPLETION OF THE FORMS SHOULD BE ADDRESSED TO THE CONTRACT SPECIALIST.

Volume I shall include the following documents (in the order listed):

1. VOLUME I BUSINESS AND FINANCIAL APPLICATION COVERSHEET

The Application Coversheet for Volume I shall be provided with each copy of Volume I.

2. APPLICATION FOR FEDERAL ASSISTANCE Standard Form 424# -- **Form # SF424**
3. FINANCIAL ASSISTANCE ASSURANCE PACKAGE -- **Form #: assure.fa**
4. BUDGET PAGE(S)

The applicant must provide detailed budget information on one or more of the following budget forms. Non-Universities can use the 4600.4 or the 424.A. Universities should submit both the D4620.1 and the ERF4620. Supporting cost data for Universities shall be submitted as indicated by the instructions to the forms. For applicants other than Universities see the instructions below under Paragraph No. 5.

Failure to provide the detailed cost information as described in the instructions will result in an incomplete package. The applicant shall stipulate in the application the source and amount of cost sharing and the value of third party in-kind contributions proposed to meet the requirement.

- a. Federal Assistance Budget Information (for other than University Applicants) -- DOE F 4600.4 -- **Form #D4600.4**
- b. Budget Page DOE F 4620.1 (for University applicants) -- **Form #D4620.1**
- c. Grant Application Project Period Summary ER F 4620.1A (for University applicants) **Form #ERF4620**
- d. Budget Information -Non-Construction Programs (for other than University applicants) SF424a -- **Form #SF424a**

5. SUPPORTING COST DATA REQUIREMENTS

The following cost detail is required for the proposed cost elements. Additionally teaming members and subcontractors are also required to submit the below information with their budgets.

Personnel -- In support of the proposed personnel costs, provide a supplemental schedule that identifies the labor hours, labor rates, and cost by labor classification. Also indicate the basis of the labor classification, number of hours, and labor rates. An example of the basis for the labor classification and number of hours could be past experience, engineering estimate, etc. An example of the basis for the labor rates could be actual rates for the individuals who will perform the work or an average labor rate for the labor classification or a departmental average rate.

Fringe Benefits -- Provide the method used to calculate the proposed rate amount. If a fringe benefit has been negotiated with, or approved by, a Federal Government agency, provide a copy of the agreement. If no rate agreement exists, provide the method used to calculate the proposed amount.

Travel -- For each proposed trip, provide the purpose, number of travelers, travel origin and destination, number of days, and a breakdown of costs for airfare, lodging, meals and incidentals. The basis for the airfare, lodging, meals and incidentals must be provided, such as past trips, current quotations, Federal Travel Regulations, etc.

Equipment -- Provide an itemized list of each piece of equipment, individual costs, and the basis for estimating the cost, for example, vendor quotes, catalog prices, prior invoices, etc.

Supplies -- Provide an itemized list of supplies, individual costs, and the basis for estimating the cost, for example, vendor quotes, catalog prices, prior invoices, etc.

Contractual -- Include in this category the cost of consultants and subcontractors in the same level of detail as the applicant's costs.

Consultants -- Provide the hourly or daily rate along with the basis for the rate. Furnish resumes or similar information regarding qualifications or experience. Provide at least two invoices reflecting hourly or daily rates charged to customers other than the Government. A statement signed by the consultant certifying his or her availability and salary must be provided. If travel or incidental expenses are to be charged, give the basis for these costs.

Subcontractors -- Provide the total cost per year for each subcontractor. Detail of subcontractor's costs should appear in the subcontractor's budget explanation.

Construction -- Provide detail of construction costs, if applicable.

Other Direct Costs -- Provide an itemized list with costs for any other item proposed as a direct cost and state the basis for each proposed item.

Indirect Costs -- If indirect rates have been negotiated with or approved by a Federal Government agency, please provide a copy of the latest rate agreement. If you do not have a current rate agreement, submit an indirect cost rate proposal which includes the major base and pool expense groupings by line item and dollar amount. In either case, provide a breakdown of the proposed indirect costs for each of our accounting periods included in the proposal. Identify the rate and allocation base for each indirect cost, such as Overhead, General and Administrative, Facilities Capital Cost of Money, etc.

6. ENVIRONMENTAL QUESTIONNAIRE --**Form # nepasol**

7. ACKNOWLEDGMENT OF AMENDMENTS

The applicant shall specifically indicate their acknowledgment and receipt of the amendment(s) posted on the NETL Website at

<http://www.netl.doe.gov/business/solicit/> by signing the amendment and including it in Volume I or stating the receipt of the amendment in the text of Volume I.

8. ADDITIONAL APPLICATION SUBMISSION REQUIREMENTS FOR FFRDC'S, DOE M&O CONTRACTORS OR LABORATORY ENTITIES

If your application includes work to be performed by an M&O contractor, the following additional information is required:

1. **Application and Field Work Proposal:** The application must include a SF 424, Application for Federal Assistance, and budget page for the applicant's portion of the project and a Field Work Proposal (See DOE Order 412.1 Work Authorization System) for the M&O portion of the project.

The application must also describe: 1) the portion of the project that will be conducted by the applicant and the portion that will be conducted by the M&O contractor and 2) the managerial arrangement between the applicant and the M&O contractor. The amount of work to be performed by the M&O

contractors in the aggregate may not be greater than the aggregate amount of work to be performed by all other participants in the project, unless a higher level of participation is determined to be in the best interest of the government in advancing the objectives of the solicitation. DOE will review the application to determine that it meets this criteria and reserves the right to reject any application that fails to do so.

2. Workscope: The application must provide a scope of work for the effort to be performed by the applicant and a separate scope of work for the effort to be performed by the M&O contractor.

3. Authorization from the DOE Contracting Officer. The applicant must submit a document from the DOE Contracting Officer or authorized designee stating that the M&O contractor is authorized to participate in the proposed work effort (See Section VI - Conditions and Notices).

9. EXCEPTIONS AND DEVIATIONS TAKEN TO THE MODEL AGREEMENT

The applicant shall identify and explain any exceptions or deviations taken or conditional assumptions made with respect to the model cooperative agreement, the requirements of this Section, and any other matters associated with this solicitation.

Any exceptions taken must contain sufficient amplification and justification to permit evaluation. The benefit to the Government shall be explained for each exception taken. Such exceptions will not, of themselves, automatically cause an application to be termed unacceptable. A large number of exceptions, or one or more significant exceptions not providing benefit to the Government, however, may result in rejection of your application(s) as unacceptable.

10. SUMMARY OF EXCEPTIONS AND DEVIATIONS TAKEN IN OTHER VOLUMES

The offeror shall summarize each technical, cost, business, or other exceptions taken elsewhere, and provide specific cross references to its full discussion.

11. PROPOSAL SUPPLEMENTAL FORM

All applications are to include a completed Proposal Supplemental Form.

*****Insert NEW Proposal Supplemental Form Here*****

PROPOSAL SUPPLEMENTAL FORM

Project Title: _____

Prime Contractor Name and (Fed Ex) Address: _____

Congressional District: _____

Prime Contractor Business Type (check one):

☐ Small Business

☐ Large Business

☐ Educational Institution

☐ State/Local Government

☐ Non Profit Organization

☐ Other _____

Technical Point of Contact:

Business Point of Contact:

Name: _____

Name: _____

Address: _____

Address: _____

E-mail: _____

E-mail: _____

Phone: (Voice) _____

Phone: (Voice) _____

(Fax) _____

(Fax) _____

Government Share of Total Proposed Project: \$ _____

Recipient Share of Total Proposed Project: \$ _____

(Minimum of 50% of total project value)

Total Project Value: \$ _____

Total Project Duration (Months): _____

SECTION VIII -- APPENDIX B

**TECHNICAL APPLICATION PREPARATION INSTRUCTIONS
FOR SOLICITATION NUMBER:
DE-PS26-01NT41094**

This is the Proposal Coversheet for Volume II and shall be provided with the original and each copy of Volume II.

VOLUME II -- TECHNICAL APPLICATION COVERSHEET
Industries of the Future, Emerging Technology Deployment
DE-PS26-01NT41094

Proposal No. _____ (For official use only)

Proposal Date: _____

Acceptance Days: _____

Proposed Title: _____

Company Name: _____

Address: _____

Point of Contact: _____

Telephone/FAX Number: _____

Principal Investigator: _____

Telephone Number: _____

PROPRIETARY INFORMATION: Does this submittal contain Trade Secrets or Proprietary Information?

_____ NO _____ YES (if yes, complete box below)

NOTICE OF RESTRICTIONS ON DISCLOSURE AND USE OF DATA

The data contained on pages _____ of this application have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes, provided that if this applicant receives an award as a result of or in connection with the submission of this application, DOE shall have the right to use or disclose the data herein to the extent provided in the award. This restriction does not limit the Government's right to use or disclose data obtained without restriction from any source, including the applicant.

8.1 FORMAT AND CONTENT -- VOLUME II TECHNICAL PROPOSAL

In order to produce a comprehensive proposal for this solicitation, the applicant is required to address, at a minimum, the areas listed below. To help facilitate the review process and to insure addressing all the review criteria, the applicant shall use the following Table of Contents when preparing the technical proposal.

TABLE OF CONTENTS

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1. TECHNICAL MERIT
2. ENERGY, ENVIRONMENTAL AND ECONOMIC BENEFITS
3. PROJECT PLAN
4. APPLICANT/TEAM CAPABILITIES AND FACILITIES
5. REPLICATION PLAN

Total ≤ 20 Pages

APPENDICES

A. STATEMENT OF PROJECT OBJECTIVES	A1
B. RESUMES	B1
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8.2 STATEMENT OF PROJECT OBJECTIVES

1. PROJECT BACKGROUND

The U.S. Department of Energy (DOE) Office of Energy Efficiency and Renewable Energy (EERE), through its Office of Industrial Technologies (OIT), supports industries in their efforts to increase energy efficiency, reduce waste, and increase productivity. The goal of OIT is to accelerate the development and use of advanced energy efficient, renewable, and pollution prevention technologies that benefit industry, the environment, and U.S. energy security. OIT's core program activities evolve through implementation of the Industries of the Future (IOF) strategy, i.e., by partnering with industry for joint research, development, demonstration, and implementation to reach the industry-wide vision goals. To date, OIT has established such partnerships with the following, nine materials and processing industry sectors: agriculture, aluminum, chemicals, forest products, glass, metalcasting, mining, petroleum, and steel. Each of the nine industrial sectors, also known as the IOF industrial sectors, has developed a vision document defining the industry-specific vision for the future and one or more technology roadmaps that identify the technologies needed to reach the industry's vision goals. This solicitation seeks proposals for technology implementation projects that address the needs identified in IOF vision documents and associated technology roadmaps. Negotiations with successful applicants will result in cost-shared cooperative agreements.

This solicitation is commissioned on behalf of the OIT Best practices Program, which has been established to provide integrated delivery of energy-saving products, services, and technologies to the nine IOF sectors. Using a plant-wide systems approach, the Best practices Program focuses its activities on two major mission areas:

- * Bringing emerging technologies into use by IOF sectors, and
- * Providing technical assistance targeting immediate cost-saving opportunities and productivity improvements for IOF customers.

This solicitation is intended to support the Best practices Program mission area of bringing emerging technologies into use. Additional information about the Best

practices Program can be found on the Program Website (<http://www.oit.doe.gov/bestpractices>). The IOF industry-specific vision documents and technology roadmaps are available at <http://www.oit.doe.gov/> under individual IOF program areas.

2. Project Description

This solicitation seeks proposals in support of the OIT goal and strategic approach to improve industrial energy intensity by 25 percent from the 1990 level by 2010.

Since the introduction of the IOF strategy in 1994, many technologies have been undertaken for research, development, and demonstration by OIT/industry partnerships (referred to as the OIT-supported technologies) and have progressed through the demonstration phase ready for full-scale implementation. An exemplary list of such technologies is provided in Appendix B. Also, other non-OIT technologies, such as those supported by industry and/or other federal programs, have been advanced to the same stage of implementation readiness, with demonstrated applicability and benefits to IOF sectors.

The Best practices Program intends to accomplish facilitating broad industrial acceptance of these technologies by providing cost-shared support through this solicitation for their implementation at IOF manufacturing and processing facilities. Thus, this solicitation seeks industry cost-shared projects to implement OIT-supported or non-OIT technologies that meet the following requirements:

- * Address the needs in IOF vision documents and technology roadmaps;
- * Have completed research and development and have progressed through a demonstration at a pilot-scale or full-scale facility, with demonstrated performance benefits in energy conservation and emissions reductions;
- * Have potential to result in significant improvements in energy efficiency, environmental performance, and economic competitiveness across the industry.

Projects of most interest will be those that show significant energy savings and large market penetration either through multiple implementations within one industrial sector

or broad applicability across all IOF sectors. While considering the program policy factors, the DOE Source Selection Official will give preference to those OIT-supported technologies for selection for award negotiation.

8.3 PUBLIC ABSTRACT (OCT 2000)

This section shall contain a concise public abstract of not more than one (1) typewritten page clearly stating the objectives of the project, the title of the project, methodology, and sponsoring organization(s). The abstract is to provide an overview of the proposed project objectives. It is a stand-alone document. This abstract may be released to the public by DOE in whole or in part at any time. It is, therefore, required that it shall not contain proprietary data or confidential business information. The offeror shall indicate a point of contact for coordination, preparation and distribution of press releases.

8.4 GENERAL INFORMATION

The application shall describe the actual work proposed.

The Technical Application shall not exceed 20 single-sided pages. The statement of project objectives, resumes, additional pertinent publications and the technical exceptions and deviations are to be attachments to the application and will not be included in the 20 page limitation. Pages in excess of the 20 page limitation may be removed from the application prior to evaluation. The proposed text shall be typed, single spaced, using Elite size (12 pitch) type (or computer font equivalent) and printed, unreduced on size 8 ½-inch by 11-inch paper. Illustrations shall be legible and no longer than 11-inch by 17-inch fold-outs, as appropriate for the subject matter. Each 11-inch by 17-inch fold-out is considered two pages when determining the number of pages. Pages of each volume shall be sequentially numbered with the volume and page numbers on each page. Except as otherwise noted in the solicitation, the page guidelines previously set forth constitute a limitation on the total amount of material that may be submitted for evaluation. No material may be incorporated in any application by reference as a means to circumvent the page limitation.

All measurements described in the application shall be expressed in the metric (SI) system with the United States Customary Units (USCU) in parentheses. Additionally, applicants are hereby notified that any instrumentation associated with tasks which will be performed will be required to be in the SI system with USCU in

parenthesis and all technical reporting will require information in the SI system with USCU in parenthesis.

The applicant shall organize the Technical Discussion as follows:

1. Technical Merit
2. Energy, Environmental and Economic Benefits
3. Project Plan
4. Applicant/Team Capabilities and Facilities
5. Replication Plan

Topics 1, 2, 3, 4, and 5 each correspond to one of the Technical Evaluation Criteria. The applicant should provide as much detail as practical in each part while providing, as a minimum, the information requested below. The applicant's discussion of each area should clearly address the technical evaluation criteria for that area.

8.5 TECHNICAL MERIT (CRITERION 1)

The application should discuss the performance history of the proposed technology or process to illustrate its readiness, viability, and potential for plant implementation. The application must illustrate that the technology/process has been previously demonstrated and include specific performance data. Fundamental process flow diagrams should be submitted with discussion of technical details (as available) of the technology and system proposed for implementation. Where the application includes a technology/process developed by the Office of Industrial Technologies (OIT), the application shall include the project identification number in the OITIS (OIT Information System) database. The OITIS project ID can be found in the table of exemplary OIT technologies in Appendix B of this solicitation or by contacting the respective program manager listed on <http://www.oit.doe.gov/phone.shtml>.

The application should also identify the IOF industrial sectors that would be directly impacted by the proposed technology. Describe how the proposed technology correlates with the priority research and development needs identified in the IOF technology roadmaps.

8.6 ENERGY, ENVIRONMENTAL, AND ECONOMIC BENEFITS (CRITERION 2)

Describe how the proposed technology as compared to the current technology will significantly enhance energy efficiency, environmental performance, and economic competitiveness across the IOF sectors. Provide a brief description of the current baseline technology and process and justify the benefits of the proposed implementation over baseline practice based on or projected from the previous demonstration results. The comparative benefit analysis between the proposed technology and the current technology should be conducted at a system level, inclusive of the overall effect on the plant energy systems such as the motors, steam, compressed air, and process heating systems. Notwithstanding these benefits, explain why U.S. industry is not actively implementing the proposed technology and why federal financial assistance is needed for implementation. Complete the three tables included in Appendix B (Below) of this solicitation. Provide the assumptions and detailed calculations of energy savings, environmental savings, and resultant economic benefit to the overall IOF sectors.

TABLE 1
ENERGY SAVINGS

Energy Source	(a) Current Technology (Energy Used per Installed or Production Unit per Year)	(b) Proposed Technology (Energy Used per Installed or Production Unit per Year)
Electricity (kWh)		
Natural Gas (cubic feet)		
Petroleum (barrels)		
Coal (short tons)		
Feedstock (Btu, please specify)		
Renewable (Btu, please specify)		
Waste (Btu, please specify)		

The first column is the type of energy. The second column (a) is the energy consumed with the current technology. The third column (b) is the estimated energy consumed with the proposed technology.

TABLE 2

**ENVIRONMENTAL SAVINGS FROM REDUCTION IN
NON-COMBUSTION RELATED EMISSIONS**

Please complete Table 2 using the installed or production unit used in Table 1.

Waste Generated (tons)	(a) Current Technology (Energy Used per Installed or Production Unit per Year)	(b) Proposed Technology (Energy Used per Installed or Production Unit per Year)
CO ₂		
Other Greenhouse Gases (please specify)		
Carbon Monoxide		
SO ₂		
NO _x		
Particulates		
VOCs		
Hydrocarbons		
Other Waste Emissions (please specify)		

The first column is the type of waste. The second column (a) is the amount of waste generated with the current technology. The third column (b) is the estimated amount of waste generated with the proposed technology.

TABLE 3
COMMERCIALIZATION MARKET

Please complete Table 3 using the installed or production unit used in Tables 1 and 2.

	2001	2002	2005	2010	2015	2020
(a) Potential Market * (number of units)						
(b) Capturable Market ** (number of units)						

*** The Potential Market (a) is that fraction of the entire market to which the technology is truly applicable.**

Remember to project the number of installed or production units by first considering limiting factors related to the technology and market fit. For instance, the proposed technology may not fit each type of process:

- The technology may only fit a certain size range of equipment.
- The technology may only fit within a certain class of process equipment.

**** The Capturable Market (b) is that fraction of the Potential Market willing to accept the new technology.**

Remember that the rate at which industrial technologies capture the market depends on:

- Technology characteristics (technology economics, new vs. retrofit)
- Industry characteristics (industry growth, competition)
- External (government regulation, trade restrictions)

Please project the number of installed or production units in the capturable market by first considering these limiting factors related to rates of market acceptance.

8.7 PROJECT PLAN (CRITERION 3)

Describe the project goals, scope of work, and objectives. Provide an implementation schedule outlining key milestone events and schedules. Identify and describe decision points and go/no-go decision criteria. Provide a spending plan by key milestone and decision point. Provide a description of and justification for needed facilities and equipment with associated estimated costs. Provide budget justification and sources concerning proposed costs in sufficient detail to allow the U.S. Department of Energy (DOE) to verify cost-share contributions, percentages, and source. Describe the project organization and individual responsibilities. Describe how tasks will be integrated among the participants and how the project will be coordinated. Describe the project management structure. Discuss the management philosophy for achieving project success.

With regard to technology verification, provide a plan for data acquisition, handling, analysis, and quality assurance. Describe how the project team will work with the third-party, independent verification entity to provide the needed data set for verification and provide the timeline for such data delivery.

8.8 APPLICANT/TEAM CAPABILITIES AND FACILITIES (CRITERION 4)

Identify the participating members of the team and the unique strengths, skills, and capabilities of each member. Provide brief resumes of key personnel, describe their responsibilities and related experience, and identify individual levels of effort. Describe relevant facilities and equipment that will be available and required for use on this project. Describe the demonstrated current corporate experience and success in similar projects resulting in successful technology implementation and commercialization.

A multi-disciplinary team approach will be preferred, which involves material participation of technology providers, users at industrial plants, technology vendors, and appropriate stakeholders.

8.9 REPLICATION PLAN (CRITERION 5)

Provide a plan and schedule for replication of the implementation by the project team at other plant locations. Describe how the technology will be made available to a wide cross-section of industrial sectors at the earliest practicable time. Discuss intellectual property rights relating to such a broad implementation and institutional alliances to execute the multi-implementation strategy.

It shall be noted that the funds resulting from the award of this solicitation shall not be used to support the replication work, and that the costs of replication(s) shall not be included in the overall project cost or in the cost-share calculation.

8.10 INSTRUCTIONS FOR PREPARING STATEMENT OF PROJECT OBJECTIVES

THE STATEMENT OF PROJECT OBJECTIVES SHALL BE LIMITED TO FIVE (5) PAGES IN TOTAL AND SHALL BE INCLUDED AS APPENDIX A. The following is the format in which the Statement of Project Objectives shall be prepared:

Title of Work to Be Performed:

Insert title of work to be performed. Be concise yet descriptive (e.g., "Development of an Aluminum Scrap Decoater").

A. Objectives:

Include one paragraph on the overall objective(s) of the work.

B. Scope of Work:

This section shall not exceed ½ page and shall define the effort which will take place and the methodology to achieve the objective of the work.

C. Tasks to be Performed:

Detailed tasks, concisely written, shall be provided in a logical sequence.

E. Deliverables:

Provide a listing of deliverables other than those identified in the Reporting Requirements Checklist contained in Attachment B of the model cooperative agreement.

8.11 TECHNICAL EXCEPTIONS AND DEVIATIONS (JULY 1999)

This section shall identify and explain any exceptions or deviations taken or conditional assumptions made with respect to the technical requirements of the solicitation.

Any exceptions taken must contain sufficient amplification and justification to permit evaluation. All benefits to the Government shall be explained for each exception taken. Such exceptions will not, of themselves, automatically cause an application to be termed unacceptable. However, a large number of exceptions, or one or more significant exceptions not providing benefit to the Government may result in rejection of the application(s) as unacceptable.

APPENDIX C

EXEMPLARY LIST OF OIT - DEVELOPED TECHNOLOGIES READY FOR IMPLEMENTATION

The technologies listed in this section have been identified as ready for implementation, having been developed under Office of Industrial Technologies (OIT) support through a pilot-scale or field demonstration phase with demonstrated performance benefits as compared to the baseline practice. This list is intended to serve as a reference resource for those Industries of the Future (IOF) manufacturing plants that are interested in implementing new technologies to improve energy efficiency of plant operations, but which need a place to start searching for technologies pertinent to their specific applications. The list is not intended to be either inclusive of all OIT-supported technologies ready for implementation or exclusive of all other energy-efficient technologies for implementation assistance under this solicitation. Again, this list is exemplary, showing a portfolio of diverse technologies available for implementation. Technologies not shown on this list are also invited for submission as long as they have been developed, with or without OIT support, through the stage of a pilot-scale or field demonstration and have met all other solicitation requirements.

The technologies are listed by primary IOF industrial sector or under the category of Crosscutting Technologies if the technology applicability is similar in extent for more than one IOF sector. A reference for additional information is provided for each cited technology. The referenced information can be downloaded from the listed Website or obtained by contacting the OIT Clearinghouse at (800) 862-2086.

The following technologies have been supported by the OIT, are at varying stages of commercial readiness, and are ready for implementation.

Agriculture

OITIS ID	Technology Title	Developer/ Contact Info	Reference
118	Membrane Filtration Technology to Process Black Olives	Tri Valley Growers Bob Moore (559) 674-8741	http://www.oit.doe.gov/nice3/pdfs/successes/olives.pdf
157	Energy-Efficient Food-Blanching System	Key Technology, Inc. Randy Unterseher (800) 767-6950	http://www.oit.doe.gov/nice3/pdfs/successes/foodblanching.pdf

Aluminum

OITIS ID	Technology Title	Developer/ Contact Info	Reference
416	Innovative Vertical Floatation Melter (VFM) and Scrap Dryer	Energy Research Co. Robert De Saro (718) 442-2725	http://www.oit.doe.gov/factsheets/aluminum/pdfs/floatation.pdf
643	Aluminum Scrap Decoater	Energy Research Co. Robert De Saro (718) 442-2725	http://www.oit.doe.gov/factsheets/nice3/pdfs/26056scrapdecoater.pdf
833	Detection and Removal of Molten Salts from Molten Aluminum Alloys	Selee Corporation Kenneth Butcher (704) 697-2411	http://www.oit.doe.gov/factsheets/aluminum/pdfs/moltenalts.pdf
835	High-Efficiency, High-Capacity, Low-NOx Aluminum Melting Using Oxygen-Enhanced Combustion	Air Products & Chemicals, Inc. Allentown, Pennsylvania	http://www.oit.doe.gov/factsheets/aluminum/pdfs/lownox.pdf
930	Improved Grain Refinement Process for Aluminum	JDC, Inc. Geoffrey K. Sigworth (304) 564-4331	http://www.oit.doe.gov/factsheets/aluminum/pdfs/grainref.pdf
1057	Continuous Fiber Ceramic Composite Immersion Tube	Textron Systems Division Bill Darden (978) 452-8961	http://www.oit.doe.gov/factsheets/cfcc/pdfs/immers_tubes.pdf

Chemicals

OITIS ID	Technology Title	Developer/ Contact Info	Reference
126	UV-Curable Coatings for Aluminum Can Production	Coors Brewing Co. Robert Brady (303) 277-2196	http://www.oit.doe.gov/nice3/pdfs/factsheet/s/coors.pdf
127	Powder Paint Coating System	Chrysler Newark Assembly Plant Tom Webster (302) 453-5273	http://www.oit.doe.gov/nice3/pdfs/successes/chrysler.pdf

OITIS ID	Technology Title	Developer/ Contact Info	Reference
131	Water-Washed Overspray Paint Recovery	Caterpillar John Spangler (309) 675-2855	http://www.oit.doe.gov/nice3/pdfs/successes/paintrecovery.pdf
140	Ultrasonic Tank Cleaning	TELSONIC Ultrasonics Angelo C. Piro (800) 691-3111	http://www.oit.doe.gov/nice3/pdfs/successes/ultrasonic.pdf
158	Ink Jet Printer Solvent Recovery	QTI Carol MacKenzie (414) 246-7500	http://www.oit.doe.gov/nice3/pdfs/successes/inkjet.pdf
159	Methanol Recovery from Hydrogen Peroxide Production	FMC Corp. Tom Solomon (281) 474-8759	http://www.oit.doe.gov/nice3/pdfs/successes/methanolrecovery.pdf
160	Paint Wastewater Recovery	PPG Industries, Inc. Maura LaGreca (216) 671-7752	http://www.oit.doe.gov/nice3/pdfs/successes/paintwastewater.pdf
200	Production of Chemicals from Thermoset Plastics	National Renewable Energy Laboratory Dr. Stephen Kelley (303) 384-6123	http://www.oit.doe.gov/factsheets/chemicals/pdfs/thermoset.pdf
339, 406	Separation and Recovery of Thermoplastics for Reuse via Froth Flotation	Argonne National Laboratory Edward J. Daniels (630) 252-5279	http://www.es.anl.gov/htmls/scrap.html http://www.oit.doe.gov/factsheets/chemicals/pdfs/froth.pdf (A 2000 R&D 100 Award)
407	Novel Membrane-Based Process for Producing Lactate Esters - Nontoxic Replacements for Halogenated and Toxic Solvents	Argonne National Laboratory S.P. Tsai (630) 252-5006	http://www.oit.doe.gov/factsheets/chemicals/pdfs/lactatest.pdf
445	Production of Succinic Acid from Wood Wastes and Plants	Argonne National Laboratory Mark Donnelly (630) 252-5279; Oak Ridge National Laboratory Brian Davison (423) 576-8522	http://www.oit.doe.gov/factsheets/chemicals/pdfs/succinic.pdf (A 1997 R&D Award)

Forest Products

Section IX

OITIS ID	Technology Title	Developer/ Contact Info	Reference
120	Pallet Production Using Post-consumer Wastepaper	Damage Prevention Products Corp. Frank DiBerardino (707) 747-5503	http://www.oit.doe.gov/nice3/pdfs/successes/wastepaper.pdf
133	Manufacturing Tissue Paper Products Using a High Content of Recovered Office Products	Erving Paper Mills Tom Newton (978) 544-2711, ext. 269	http://www.oit.doe.gov/nice3/pdfs/successes/Erving.pdf
647	Chemical for Increasing Wood Pulping Yield	ChemStone, Inc. Chris Bigalke (864) 458-8077	http://www.oit.doe.gov/nice3/pdfs/successes/woodpulp.pdf
687	Radiofrequency-Induced VOC Pre-Extraction from Softwood Lumber	Institute of Paper Science and Technology Sujit Banerjee (404) 894-9709	http://www.oit.doe.gov/factsheets/forest/pdfs/dry-wood.pdf
827	Fiber Optic Sensor for On-Line Measurement of Paper Basis Weight	Pacific Northwest National Laboratory Jeff Griffin (509) 375-2081	http://www.oit.doe.gov/forest/fbroptic.htm
	Environmentally-Friendly Polymer Replacing Petroleum-Based Resins	Lenox Polymers Ltd. Kenneth Kurple (810) 364-3774	http://www.oit.doe.gov/inventions/pdfs/lennox.pdf

Glass

OITIS ID	Technology Title	Developer/ Contact Info	Reference
384	Integrated Batch and Cullet Preheater System	Praxair Inc., Linde Division Ray Chamberland (914) 345-6424	http://www.oit.doe.gov/factsheets/glass/pdfs/cullet.pdf
1257	Dynamic Expert System Controls for Optimal Oxyfuel Melter Performance	Sandia National Laboratories Roger Farrow (925) 294-3259	http://www.oit.doe.gov/factsheets/glass/pdfs/des.pdf

Metalcasting

OITIS ID	Technology Title	Developer/ Contact Info	Reference
99, 103, 739, 968	Intelligent Control of the Cupola Furnace	OIT Harvey Wong (202) 586-9235 (No contacts for 9 partners)	http://www.oit.doe.gov/factsheets/metalcast/pdfs/cupola2.pdf
101, 746, 1182	Clean Cast Steel	University of Alabama – Birmingham C. Bates (205) 975-8120	http://www.oit.doe.gov/factsheets/metalcast/pdfs/cleansteelnew.pdf
293, 1184	Advanced Lost Foam Casting Technology	University of Alabama – Birmingham C. Bates (205) 975-8120	http://www.oit.doe.gov/factsheets/metalcast/pdfs/lostfoam.pdf
	Meta-Lax Stress Relief Process Saves Energy	Bonal Technologies, Inc. Thomas Hebel (248) 353-2041	http://www.oit.doe.gov/factsheets/inventions/pdfs/meta_lax.pdf
	Visualization Tools for Die Casting	OIT Harvey Wong (202) 586-9235 (No contacts for 11 partners)	http://www.oit.doe.gov/metalcast/pdfs/vistool.pdf

Mining

OITIS ID	Technology Title	Developer/ Contact Info	Reference
1175	Wireless Telemetry for Mine Monitoring and Emergency Communications	Transtek, Inc. Zvi Meiksin (412) 802-8455	http://www.oit.doe.gov/factsheets/inventions/pdfs/25192wireless.pdf
	Ramex Tunneler	Ramex Systems, Inc. Garfield Johnson (604) 929-2262	http://www.oit.doe.gov/factsheets/inventions/pdfs/25190ramex.pdf
	Variable Wall Mining Machine with Dual Duct Ventilation System	Kelastec Mine Beam Co. Jay Kelley (412) 832-8832	http://www.oit.doe.gov/factsheets/inventions/pdfs/25191varwall.pdf

Petroleum

OITIS ID	Technology Title	Developer/ Contact Info	Reference
194	Radiation Stabilized Distributed Flux Burner	Alzeta Corporation John D. Sullivan (408) 727-8282	http://www.oit.doe.gov/factsheets/petroleum/pdf/rsburnerpet.pdf
195	Forced Internal Recirculation (FIR) Burner	Institute of Gas Technology M. Roberts (312) 890-6417	http://www.oit.doe.gov/factsheets/petroleum/pdf/firburnerpet.pdf
1044	Gas Imaging for Advanced Leak Detection	American Petroleum Institute Karin Ritter (202) 682-8472	http://www.oit.doe.gov/factsheets/petroleum/pdf/leakdetect.pdf
1349	Industrial Refrigeration System	Energy Concepts Don Erickson (410) 266-6521	http://www.oit.doe.gov/factsheets/petroleum/pdf/ultramar.pdf
	Robotics Inspection System for Storage Tanks	Solex Environmental Systems, Inc. Don Hartsell (713) 963-8600	http://www.oit.doe.gov/nice3/pdfs/successes/solex.pdf (A 1999 R&D 100 Award)
	New Technology for Sulfide Reduction and Increased Oil Recovery	The LATA Group Mike Dennis (918) 535-2147	http://www.oit.doe.gov/factsheets/inventions/pdfs/fs26745.pdf

Steel

OITIS ID	Technology Title	Developer/ Contact Info	Reference
13, 14	Nickel Aluminide Radiant Tubes and Seal Rolls	Oak Ridge National Laboratory Peter Angelini (865) 574-4565	http://www.oit.doe.gov/materials/
151	Hydrochloric Acid Recovery System	Beta Control Systems, Inc. Bryan Cullivan (503) 646-3399	http://www.oit.doe.gov/nice3/pdfs/successes/hydrochloricacid.pdf
193	Dilute Oxygen Combustion System	Praxair Inc., Linde Division Hisashi Kobayashi (914) 789-3551	http://www.oit.doe.gov/factsheets/steel/pdfs/docsteel.pdf
646	Energy-Efficient Process for Hot-Dip Batch Galvanizing	Ferro Technologies, Inc. Michael Doll (412) 826-3239	http://www.oit.doe.gov/nice3/pdfs/successes/ferrotech.pdf
810	Emission Reduction by Oscillating Combustion	Institute of Gas Technology Harry Kurek (847) 768-0527	http://www.oit.doe.gov/factsheets/steel/pdfs/osclsteel.pdf
814	Advanced Control of Operations in the Blast Furnace	Los Alamos National Laboratory Dominic Cagliostro (505) 667-8500	http://www.oit.doe.gov/factsheets/steel/pdfs/blastfurnace.pdf
	Temperature Measurement of Galvanneal Steel	American Iron & Steel Institute Joseph R. Vehec (412) 566-2327	http://www.oit.doe.gov/factsheets/steel/pdfs/tempmeasure.pdf
	Continuous Casting/Inside Rolling of Hollow Rounds	Schwarz Consulting, Inc. Gary Schwarz (440) 933-9340	http://www.oit.doe.gov/factsheets/inventions/pdfs/fs26739.pdf
	Optical Sensors for Improved Basic Oxygen Furnace Operations	Sandia National Laboratories Don Hardesty (925) 294-2321	http://www.oit.doe.gov/factsheets/steel/pdfs/bof_operations.pdf

Crosscutting Technologies

OITIS ID	Technology Title	Developer/ Contact Info	Reference
124	Cathodic Arc Deposition Technology	Vacuum Plating Technology Corp Dr. Brent Lee (418) 998-8998	http://www.oit.doe.gov/nice3/pdfs/successes/cathodicarc.pdf
146	Real-Time Neural Networks for Utility Boilers	Pegasus Technologies Corp. Willie Roland (440) 357-7794	http://www.oit.doe.gov/nice3/pdfs/successes/neuralnetworks.pdf
1059	Ceramic Composite, Radiant Burner Screens	AlliedSignal Composites, Inc. Phil Craig (302) 456-6577	http://www.oit.doe.gov/factsheets/cfcc/pdfs/rad_burners.pdf
	Waste-Minimizing Plating Barrel	Whyco Technologies, Inc. Mark Hyner (860) 283-5826	http://www.oit.doe.gov/nice3/pdfs/successes/platingbarrel.pdf
	Aerocylinder for Replacement of Conventional Air Cylinders	Aeroproducts International, LTD. Ken Smedberg (773) 734-8000	http://www.oit.doe.gov/inventions/pdfs/aerocylinder.pdf
	Resistance Welder Adaptive Control	WeldComputer Corp. Dennis Hull (800) 553-9353	http://www.oit.doe.gov/factsheets/inventions/pdfs/fs26730.pdf
	New Bearings for High-Performance Machinery	KMC, Inc. Dilip Jain (401) 392-1900	http://www.oit.doe.gov/inventions/pdfs/bearing.pdf
	Waste Fluid Energy Recovery System	WaterFilm Energy, Inc. Dr. Carmine Vasile (631) 758-6271	http://www.oit.doe.gov/factsheets/inventions/pdfs/FS26746final.pdf
	Delta T Dryer Control System	Drying Technology, Inc. John Robinson (409) 385-6422	http://www.oit.doe.gov/inventions/pdfs/dryer.pdf